AECOM

Environmental Protection Department

Contract No. HY/2012/06

Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange

Monthly EM&A Report For March 2015

[04/2015]

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15 April 2015
By Fax (2805 5028) & Post

Dear Sir,

Attn: Mr. James Penny

Environmental Monitoring and Audit (EM&A) for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling
Stage 2 (between Tai Hang to Wo Hop Shek Interchange)
Environmental Permit No. EP-324/2008/C
Condition 3.3 – Submission of Monthly EM&A Report – March 2015 for the portion of Stage 2 works under Contract No. HY/2012/06

We refer to the revised Monthly EM&A Report – March 2015 received on 13 and 14 March 2015 submitted by the Environmental Team via email. Pursuant to Environmental Permit Condition 3.3, I hereby verify the Monthly EM&A Report – March 2015 (Rev. 0) for the portion of works under Stage 2 of the captioned Project which is managed under Contract No. HY/2012/06.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Terence Kong
Independent Environmental Checker

c.c. HyD – Mr. Chung Lok Chin / Mr. Tang Man Kai (Fax: 2714 5198)
AECOM – Mr. Y W Fung (Fax:2891 0305)

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EXECUTIVE SUMMARY

The proposed widening of Tolo Highway and Fanling Highway between Island House Interchange and Fanling (the Project) is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO). An Environmental Impact Assessment (EIA) Report (the approved EIA Report) together with an Environmental Monitoring and Audit (EM&A) Manual (the approved EM&A Manual) were completed and approved under the EIAO on 14 July 2000 (Register Number: EIA-043/2000).

The objective of the Project "Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling" is to widen Tolo Highway and Fanling Highway to dual 4-lane carriageway in order to alleviate the current traffic congestion problems and to cope with the increasing transport demands to and from the urban areas and also cross boundary traffic.

The Project is a designated project and governed by an Environmental Permit (EP-324/2008) issued by the EPD on 23 December 2008. Subsequently, the EPD issued a Variation of Environmental Permit (EP-324/2008/A) (VEP) on 31 January 2012 and the VEP (EP-324/2008/B) was granted on 17 March 2014. The current valid VEP was applied on 9 March 2015 and the VEP (EP-324/2008/C) was subsequently granted on 27 March 2015.

The construction works for this Project are delivered in 2 stages i.e. Stage 1 (between Island House Interchange and Tai Hang) and Stage 2 (between Tai Hang and Wo Hop Shek Interchange). Stage 2 would be implemented under two works contracts. Contract No. HY2012/06 "Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange" and the entrusted portion to CEDD under Contract No. CV/2012/09 "Liantang/Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works – Contract 3". This report focuses on Contract No. HY2012/06 "Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange" in Stage 2 of the Project only.

Pursuant to the EP (EP-324/2008/C) Condition 2.7, the Capture Survey Trip Report for Ma Wat River Northern Meander (Version 2) for the Project was submitted on 24 December 2013 by the Environmental Team (ET) and verified by the Independent Environmental Checker (IEC) on 6 January 2014.

The construction phase of the Contract under the EP and the Environmental Monitoring and Audit (EM&A) programme of the contract commenced on 21 November 2013. The impact environmental monitoring and audit includes air quality and noise monitoring.

This report documents the findings of EM&A works conducted in the period between 1 and 31 March 2015. As informed by the Contractor, construction activities in the reporting period were:

- Site clearance
- Ground investigation
- Piling works
- Pipe laying
- Retaining wall construction
- Noise barrier
- Excavation
- Backfilling
- Drainage
- Temporary bridge construction
- House construction
- Box culvert construction
- Footbridge demolition

Reporting Change

There was no reporting change required in the reporting period.

Breaches of Action and Limit Levels for Air Quality

No exceedance of Action and Limit Level was recorded for 1-hour and 24-hour TSP monitoring in the reporting period.

Breaches of Action and Limit Levels for Noise

No Action or Limit Level exceedance of construction noise was recorded in the reporting month. No noise complaints related to 0700 – 1900 hours on normal weekdays was received and followed by Environmental Team in the reporting month.

Complaint, Notification of Summons and Successful Prosecution

One (1) odour-related complaint was received on 25 March 2015 and followed up by the Environmental Team in the reporting month. The details of the complaint are described in Section 4.6.4 and the full complaint investigation report is annexed in Appendix M.

No notification of summons and successful prosecution was received in the reporting month.

Future Key Issues

Key issues to be considered in the coming month include:

- Properly store and label oils and chemicals on site;
- Chemical, chemical waste and waste management;
- Collection of construction waste should be carried out regularly;
- Properly maintain all drainage facilities and wheel washing facilities on site;
- Exposed slopes should be covered up properly if no temporary work will be conducted;
- Quieter powered mechanical equipment should be used;
- Suppress dust generated from excavation activities and haul road traffic; and
- Tree protective measures for all retained trees should be well maintained.

1 INTRODUCTION

1.1 Background

1.1.1. Tolo Highway and Fanling Highway are the expressways in the North East New Territories (NENT) connecting Sha Tin, Tai Po and Fanling. These highways form a vital part of the strategic Route 9, which links Hong Kong Island to the boundary at Shenzhen. At present, this section of Route 9 is a dual 3-lane carriageway. However, at several major interchanges along this section of Route 9, the highway is a dual-2 lane carriageway only. Severe congestion is a frequent occurrence during the peak periods, particularly in the Kowloon-bound direction.

1.1.2. The objective of the Project "Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling" is to widen Tolo Highway and Fanling Highway to dual 4-lane carriageway in order to alleviate the current traffic congestion problems and to cope with the increasing transport demands to and from the urban areas and also cross boundary traffic.

1.1.3. The Project is a designated project and governed by an Environmental Permit (EP-324/2008) issued by the EPD on 23 December 2008. Subsequently, the EPD issued a Variation of Environmental Permit (EP-324/2008/A) (VEP) on 31 January 2012 and the VEP (EP-324/2008/B) was granted on 17 March 2014. The current valid VEP was applied on 9 March 2015 and the VEP (EP-324/2008/C) was subsequently granted on 27 March 2015.

1.1.4. The scope of the Project comprises mainly:-

(i) Widening of a 5.7 km section of Tolo Highway and 3.0 km section of Fanling Highway between Island House Interchange and Wo Hop Shek Interchange from the existing dual 3-lane to dual 4-lane, including construction of new vehicular bridges;

(ii) Widening of interchange sections at Island House Interchange, Tai Po North Interchange, and Lam Kam Road Interchange from dual 2-lane to dual 3-lane, except Sha Tin bound carriageway at Tai Po North Interchange, which is widened from 3-lane to 4-lane, including realignment of various slip roads;

(iii) Modification and reconstruction of highways, vehicular bridges, underpasses and footbridges.

1.1.5. The construction works for this Project will be delivered in 2 stages i.e. Stage 1 (between Island House Interchange and Tai Hang) and Stage 2 (between Tai Hang and Wo Hop Shek Interchange). Stage 2 would be implemented under two works contracts. Contract No. HY/2012/06 "Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange" and the entrusted portion to CEDD under Contract No. CV/2012/09 "Liantang/Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works – Contract 3". This report focuses on Contract No. HY2012/06 "Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange" in Stage 2 of the Project only.

1.1.6. Hyder-Arup-Black and Veatch Joint Venture (HABVJV) are appointed by Highways Department (HyD) as the consultants for the design and construction assignment for the Tolo project under Agreement No. CE 58/2000 Supplementary Agreement No. 3 (SA3) (i.e. the Engineer for the Contract).

1.1.7. China State Construction Engineering (Hong Kong) Ltd. (CSHK) was commissioned as the Contractor of the Contract.

1.1.8. AECOM Asia Co. Ltd. was commissioned by China State Construction Engineering (Hong Kong) Limited as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) works for the Contract and Mott MacDonald Hong Kong Ltd. acts as the Independent Environmental Checker (IEC) for the Contract.

1.1.9. The construction phase of the Contract under the EP commenced on 21 November 2013.

1.1.10. According to the updated EM&A Manual of Stage 2 of the Project, there is a need of an EM&A programme including air quality and noise monitoring. The EM&A programme for Stage 2 of the Project commenced on 21 November 2013.

1.2 Scope of Report

1.2.1 This is the seventeenth monthly EM&A Report under the Contract No. HY/2012/06 "Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange. This report presents a summary of the environmental monitoring and audit works, list of activities and mitigation measures proposed by the ET for the Contract in March 2015.

1.3 Project Organization

1.3.1 The project organization structure is shown in Appendix A. The key personnel contact names and numbers are summarized in Table 1.1.

Table 1.1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
ER (Hyder-Arup-Black & Veatch Joint Venture)	Chief Resident Engineer	Edwin Chung	6115 0818	2638 0950
IEC (Mott MacDonald Hong Kong Limited)	Independent Environmental Checker	Terence Kong	2828 5919	2827 1823
Contractor (China State Construction Engineering (Hong Kong) Limited)	Environmental Officer	Michael Tsang	9277 4956	2672 2501
		C C Chow	9679 6315	2672 2501
ET (AECOM Asia Company Limited)	ET Leader	Y W Fung	3922 9393	3922 9797

1.4 Summary of Construction Works

1.4.1 The construction phase for the Contract under the EP commenced on 21 November 2013.

1.4.2 Details of the construction works carried out by the Contractor in this reporting period are listed below:

- Site clearance
- Ground investigation
- Piling works
- Pipe laying
- Retaining wall construction
- Noise barrier
- Excavation
- Backfilling
- Drainage
- Temporary bridge construction
- House construction

- Box culvert construction
- Footbridge demolition

1.4.3 The Construction Programme is shown in Appendix B.

1.4.4 The general layout plan of the Project site showing the contract areas is shown in Figure 1.1.

1.4.5 The environmental mitigation measures implementation schedule are presented in Appendix C.

1.5 Summary of EM&A Programme Requirements

1.5.1 The EM&A programme required environmental monitoring for air quality, noise and environmental site inspections for air quality, water quality, noise, waste management, ecology, and landscape and visual impact. The EM&A requirements for each parameter described in the following sections include:-

- All monitoring parameters;
- Monitoring schedules for the reporting period and forthcoming months;
- Action and Limit levels for all environmental parameters;
- Event / Action Plan;
- Environmental mitigation measures, as recommended in the Project EIA study final report; and
- Environmental requirement in contract documents.

2 AIR QUALITY MONITORING

2.1 Monitoring Requirements

2.1.1 In accordance with the updated EM&A Manual, baseline 1-hour and 24-hour TSP levels at one air quality monitoring station was established. Impact 1-hour TSP monitoring was conducted for at least three times every 6 days, while impact 24-hour TSP monitoring was carried out for at least once every 6 days. The Action and Limit level of the air quality monitoring is provided in Appendix D.

2.2 Monitoring Equipment

2.2.1 24-hour TSP air quality monitoring was performed using High Volume Sampler (HVS) located at each designated monitoring station. The HVS meets all the requirements of the updated EM&A Manual. Portable direct reading dust meters were used to carry out the 1-hour TSP monitoring. Brand and model of the equipment is given in Table 2.1.

Table 2.1 Air Quality Monitoring Equipment

Equipment	Brand and Model
Portable direct reading dust meter (1-hour TSP)	Sibata Digital Dust Monitor (Model No. LD-3 and LD-3B)
High Volume Sampler (24-hour TSP)	Tisch Total Suspended Particulate Mass Flow Controlled High Volume Air Sampler (Model No. TE-5170)

2.3 Monitoring Locations

2.3.1 The monitoring station was set up at the proposed location in accordance with updated EM&A Manual. Table 2.2 describes details of the monitoring station. The locations are shown in Figure 1.2a.

Table 2.2 Locations of Impact Air Quality Monitoring Station

Location	Monitoring Station
AM2 (SR2)	Fanling Government Secondary School

2.4 Monitoring Parameters and Frequency

2.4.1 Table 2.3 summarizes the monitoring parameters, frequency and duration of impact TSP monitoring.

Table 2.3 Air Quality Monitoring Parameters and Frequency

Parameter	Frequency
24-hour TSP	Once every 6 days
1-hour TSP	3 times every 6 days while the highest dust impact was expected

2.5 Monitoring Methodology

2.5.1 24-hour TSP Monitoring

(a) The HVS was installed in the vicinity of the air sensitive receivers. The following criteria were considered in the installation of the HVS.

(i) A horizontal platform with appropriate support to secure the sampler against gusty wind was provided.
(ii) The distance between the HVS and any obstacles, such as buildings, was at least twice the height that the obstacle protrudes above the HVS.
(iii) A minimum of 2 meters separation from walls, parapets and penthouse for rooftop sampler.
(iv) A minimum of 2 meters separation from any supporting structure, measured horizontally.
(v) No furnace or incinerator flues nearby.
(vi) Airflow around the sampler was unrestricted.
(vii) Permission was obtained to set up the samplers and access to the monitoring stations.
(viii) A secured supply of electricity was obtained to operate the samplers.
(ix) The sampler was located more than 20 meters from any dripline.
(x) Any wire fence and gate, required to protect the sampler, did not obstruct the monitoring process.
(xi) Flow control accuracy was kept within ±2.5% deviation over 24-hour sampling period.

(b) Preparation of Filter Papers

(i) Glass fibre filters, G810 were labelled and sufficient filters that were clean and without pinholes were selected.
(ii) All filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ±3 °C; the relative humidity (RH) was < 50% and not variable by more than ±5%. A convenient working RH was 40%.
(iii) All filter papers were prepared and analysed by ALS Technichem (HK) Pty Ltd., which is a HOKLAS accredited laboratory and has comprehensive quality assurance and quality control programmes.

(c) Field Monitoring

(i) The power supply was checked to ensure the HVS works properly.
(ii) The filter holder and the area surrounding the filter were cleaned.
(iii) The filter holder was removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully.
(iv) The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter.
(v) The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied was sufficient to avoid air leakage at the edges.
(vi) Then the shelter lid was closed and was secured with the aluminum strip.
(vii) The HVS was warmed-up for about 5 minutes to establish run-temperature conditions.
(viii) A new flow rate record sheet was set into the flow recorder.
(ix) On site temperature and atmospheric pressure readings were taken and the flow rate of the HVS was checked and adjusted at around 1.1 m^3/min, and complied with the range specified in the updated EM&A Manual (i.e. 0.6-1.7 m^3/min).
(x) The programmable digital timer was set for a sampling period of 24 hrs, and the starting time, weather condition and the filter number were recorded.
(xi) The initial elapsed time was recorded.
(xii) At the end of sampling, on site temperature and atmospheric pressure readings were taken and the final flow rate of the HVS was checked and recorded.
(xiii) The final elapsed time was recorded.

(xiv) The sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.
(xv) It was then placed in a clean plastic envelope and sealed.
(xvi) All monitoring information was recorded on a standard data sheet.
(xvii) Filters were then sent to ALS Technichem (HK) Pty Ltd. for analysis.

(d) Maintenance and Calibration

(i) The HVS and its accessories were maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
(ii) 5-point calibration of the HVS was conducted using TE-5025A Calibration Kit prior to the commencement of baseline monitoring. Bi-monthly 5-point calibration of the HVS will be carried out during impact monitoring.
(iii) Calibration certificate of the HVSs are provided in Appendix E.

2.5.2 1-hour TSP Monitoring

(a) Measuring Procedures

The measuring procedures of the 1-hour dust meter were in accordance with the Manufacturer's Instruction Manual as follows:-
(i) Turn the power on.
(ii) Close the air collecting opening cover.
(iii) Push the "TIME SETTING" switch to [BG].
(iv) Push "START/STOP" switch to perform background measurement for 6 seconds.
(v) Turn the knob at SENSI ADJ position to insert the light scattering plate.
(vi) Leave the equipment for 1 minute upon "SPAN CHECK" is indicated in the display.
(vii) Push "START/STOP" switch to perform automatic sensitivity adjustment. This measurement takes 1 minute.
(viii) Pull out the knob and return it to MEASURE position.
(ix) Push the "TIME SETTING" switch the time set in the display to 3 hours.
(x) Lower down the air collection opening cover.
(xi) Push "START/STOP" switch to start measurement.

(b) Maintenance and Calibration

(i) The 1-hour TSP meter was calibrated at 1-year intervals against a continuous particulate TEOM Monitor, Series 1400ab. Calibration certificates of the Laser Dust Monitors are provided in Appendix E.
(ii) 1-hour validation checking of the TSP meter against HVS is carried out yearly at the air quality monitoring locations.

2.6 Monitoring Schedule for the Reporting period

2.6.1 The schedule for environmental monitoring in March 2015 is provided in Appendix F.

2.7 Results and Observations

2.7.1 The monitoring results for 1-hour TSP and 24-hour TSP are summarized in Table 2.4 and 2.5 respectively. Detailed impact air quality monitoring results are presented in Appendix G.

Table 2.4 Summary of 1-hour TSP Monitoring Results in the Reporting Period

Location	Average ($\mu g/m^3$)	Range ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
AM2 (Fanling Government Secondary School)	77.7	68.2 – 81.9	317.8	500

Table 2.5 Summary of 24-hour TSP Monitoring Results in the Reporting Period

Location	Average ($\mu g/m^3$)	Range ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
AM2 (Fanling Government Secondary School)	56.0	28.8 – 95.9	200.7	260

2.7.2 The major dust source during the monitoring was mainly from nearby traffic emission.

2.7.3 All 1-hour and 24-hour TSP results were below the Action and Limit Level at all monitoring locations in the reporting period.

2.7.4 The event action plan is annexed in Appendix J.

2.7.5 Weather information including wind speed and wind direction is annexed in Appendix H. The information was obtained from the Hong Kong Observatory Tai Po and Tai Mei Tuk Automatic Weather Stations.

3 NOISE MONITORING

3.1 Monitoring Requirements

3.1.1 In accordance with the EM&A Manual, impact noise monitoring was conducted for at least once per week during the construction phase of the Contract. The Action and Limit level of the noise monitoring is provided in Appendix D.

3.2 Monitoring Equipment

3.2.1 Noise monitoring was performed using sound level meter at each designated monitoring station. The sound level meters deployed comply with the International Electrotechnical Commission Publications (IEC) 651:1979 (Type 1) and 804:1985 (Type 1) specifications. Acoustic calibrator was deployed to check the sound level meters at a known sound pressure level. Brand and model of the equipment is given in Table 3.1.

Table 3.1 Noise Monitoring Equipment

Equipment	Brand and Model
Integrated Sound Level Meter	Rion NL-31 & B&K 2238
Acoustic Calibrator	Rion NC-73 & Rion NC-74

3.3 Monitoring Locations

3.3.1 Monitoring stations M2 and M3 were set up at the proposed locations in accordance with updated EM&A Manual. Figure 1.2a-b shows the locations of the monitoring stations. Table 3.2 describes the details of the monitoring stations.

Table 3.2 Locations of Impact Noise Monitoring Stations

Monitoring Station	Location	Description
M2	West Tai Wo	1.2m from the ground floor free-field of the Residential
M3	Fanling Government Secondary School	1m from the exterior of the roof top façade of the school

3.4 Monitoring Parameters and Frequency

3.4.1 Table 3.3 summarizes the monitoring parameters, frequency and duration of impact noise monitoring.

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

Parameter	Frequency
30-mins measurement at each monitoring station between 0700 and 1900 on normal weekdays. L_{eq}, L_{10} and L_{90} would be recorded.	At least once per week

3.5 Monitoring Methodology

3.5.1 Monitoring Procedure

(a) Façade measurement was made at monitoring station M3, while free-field measurement was made at monitoring station M2.

(b) The sound level meter was set on a tripod at a height of 1.2 m above the ground for free-field measurements at monitoring station M2.

(c) The battery condition was checked to ensure the correct functioning of the meter.

(d) Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:-

(i) frequency weighting: A
(ii) time weighting: Fast
(iii) time measurement: $L_{eq(30\text{-minutes})}$ during non-restricted hours i.e. 07:00 – 1900 on normal weekdays; $L_{eq(5\text{-minutes})}$ during restricted hours i.e. 19:00 – 23:00 and 23:00 – 07:00 of normal weekdays, whole day of Sundays and Public Holidays

(e) Prior to and after each noise measurement, the meter was calibrated using the acoustic calibrator for 94dB(A) at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1 dB(A), the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.

(f) During the monitoring period, the L_{eq}, L_{10} and L_{90} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.

(g) Noise measurement was paused during periods of high intrusive noise (e.g. dog barking, helicopter noise) if possible. Observations were recorded when intrusive noise was unavoidable.

(h) Noise monitoring was cancelled in the presence of fog, rain, wind with a steady speed exceeding 5m/s, or wind with gusts exceeding 10m/s.

3.5.2 Maintenance and Calibration

(a) The microphone head of the sound level meter was cleaned with soft cloth at regular intervals.

(b) The meter and calibrator were sent to the supplier or HOKLAS laboratory to check and calibrate at yearly intervals.

(c) Calibration certificates of the sound level meters and acoustic calibrators are provided in Appendix E.

3.6 Monitoring Schedule for the Reporting period

3.6.1 The schedule for environmental monitoring in March 2015 is provided in Appendix F.

3.7 Monitoring Results

3.7.1 The monitoring results for construction noise are summarized in Table 3.4 and the monitoring data is provided in Appendix I.

Table 3.4 Summary of Construction Noise Monitoring Results in the Reporting Period

	Average, dB(A), $L_{eq\ (30\ mins)}$	**Range, dB(A), $L_{eq\ (30\ mins)}$**	**Limit Level, dB(A), $L_{eq\ (30\ mins)}$**
M2*	67.9	66.9 – 69.1	75
M3#	64.4	60.9 – 65.7	65/70

*+3dB(A) Façade correction included
Limit Level of 70dB(A) applies to education institutes while 65dB(A) applies during school examination period.

3.7.2 No Action or Limit Level exceedance of construction noise was recorded in the reporting month. No noise complaints related to 0700 – 1900 hours on normal weekdays was received and followed by Environmental Team in the reporting month.

3.7.3 Major noise sources during noise monitoring in the reporting period were mainly road traffic noise.

3.7.4 The event action plan is annexed in Appendix J.

4 ENVIRONMENTAL SITE INSPECTION AND AUDIT

4.1 Site Inspection

4.1.1 Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Contract. In the reporting period, 5 site inspections were carried out respectively on 3, 10, 19, 24 and 31 March 2015 for the Contract. While no specific observation was recorded, recommendations on remedial actions were given to the Contractor for precautionary purpose.

4.1.2 The environmental site inspections summaries are provided in Appendix K.

4.1.3 Particular observations during the site inspections are described below:

Air Quality

4.1.4 No adverse observation was identified in the reporting period.

Noise

4.1.5 No adverse observation was identified in the reporting period.

Water Quality

4.1.6 The Contractor should review their mechanism to collect muddy water to prevent muddy water from discharging to public areas by clearing the mud accumulating in the U-channel or carrying out equivalent measures.

4.1.7 The Contractor was reminded to use another means such as pH papers to monitor the pH of the water in the sedimentation tank regularly. (Reminder)

4.1.8 The Contractor was reminded to ensure all water discharged from the construction site has passed the sedimentation tank. (Reminder)

Chemical and Waste Management

4.1.9 An oil drum was placed on bare ground without drip tray. The Contractor should provide a drip tray to the oil drum to retain oil leakage, if any.

4.1.10 A chemical container was observed without chemical label. The Contractor should stick appropriate labels on the chemical container.

Landscape and Visual Impact

4.1.11 No adverse observation was identified in the reporting period.

Miscellaneous

4.1.12 The Contractor was reminded to post the latest version of Environmental Permit at all site entrances. (Reminder)

4.1.13 Stagnant water and general refuse was observed in a trench. The Contractor should clear the stagnant water to prevent mosquito breeding and clear the refuse to maintain site hygiene.

4.2 Advice on the Solid and Liquid Waste Management Status

4.2.1 The Contractor has registered as chemical waste producers for the Contract. C&D material sorting was carried out on site. Sufficient numbers of receptacles were available for general refuse collection.

4.2.2 As advised by the Contractor, 2,364 m^3 of inert C&D material was disposed of as public fill to Tuen Mun 38 (of which 0 m^3 was broken concrete), while 80 m^3 of general refuse was disposed of at NENT landfill. 95 kg of paper/cardboard packaging, 0 kg of plastics and 22 kg of metals were collected by recycling contractors in the reporting period. 513 m^3 of inert C&D materials was reused on site. 1,226 m^3 of inert C&D materials was reused in other projects. 625 m^3 of inert C&D materials was disposed of as public fill at NENT. 0 kg of chemical wastes was collected by licensed contractors in the reporting period.

4.2.3 The actual amounts of different types of waste generated by the activities of the Project in the reporting period are shown in Table 4.1.

Table 4.1 Summary of Waste Flow Table

Waste Type	Actual Amount	Disposal/Reuse Locations
Inert C&D materials	2,364 m^3 (of which 0 m^3 was broken concrete)	Tuen Mun 38
General refuse	80 m^3	NENT Landfill
Paper/cardboard packaging	95 kg	Recycling Contractors
Plastics	0 kg	Recycling Contractors
Metals	22 kg	Recycling Contractors
C&D materials reused on site	513 m^3	Site Area
C&D materials reused in other projects	1,226 m^3	Other projects
C&D materials reused in NENT for backfilling	625 m^3	NENT Landfill
Chemical wastes	0 kg	Licensed Contractors

4.2.4 The Contractor was advised to maintain on site waste sorting and recording system and maximize reuse / recycle of C&D wastes.

4.3 Environmental Licenses and Permits

4.3.1 The environmental licenses and permits for Stage 2 of the Project and valid in the reporting period is summarized in Table 4.2.

Table 4.2 Summary of Environmental Licensing and Permit Status

Statutory Reference	License/ Permit	License or Permit No.	Valid Period		License/ Permit Holder	Remarks
			From	To		
EIAO	Environmental Permit	EP-324/2008/B	17/03/2014	N/A	HyD	The VEP (EP-324/2008/C) was subsequently granted on 9 March 2015 which superseded the previous EP (EP-

Statutory Reference	License/ Permit	License or Permit No.	Valid Period		License/ Permit Holder	Remarks
			From	To		
						324/2008/B).
WPCO	Discharge License (Site)	WT00017159 -2013	18/09/2013	30/09/2018	CSHK	--
WDO	Chemical Waste Producer Registration	5213-722-C3822-01	5/09/2013	N/A	CSHK	Chemical waste produced in Contract HY/2012/06
WDO	Billing Account for Disposal of Construction Waste	7009328	08/09/2009	N/A	CSHK	Waste disposal in Contract HY/2008/09
NCO	Construction Noise Permit	GW-RN0836-14	07/01/2015	21/03/2015	CSHK	Zone 2 Tree Felling (North Bound)
		GW-RN0119-15	26/02/2015	25/08/2015	CSHK	Zone A Grouting (SA340)
		GW-RN0122-15	01/03/2015	07/04/2015	CSHK	Zone 4 Coring of Road Pavement Samples (North Bound)
		GW-RN0149-15	15/03/2015	23/08/2015	CSHK	Zone 2 Coring of Road Pavement Samples (South Bound)

4.4 Implementation Status of Environmental Mitigation Measures

4.4.1 A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in Appendix C.

4.5 Summary of Exceedances of the Environmental Quality Performance Limit

4.5.1 All 1-hour and 24-hour TSP monitoring results complied with the Action / Limit Levels in the reporting period.

4.5.2 No Action or Limit Level exceedance of construction noise was recorded in the reporting month. No noise complaints related to 0700 – 1900 hours on normal weekdays was received and followed by Environmental Team in the reporting month.

4.6 Summary of Complaints, Notification of Summons and Successful Prosecutions

4.6.1 The Environmental Complaint Handling Procedure is annexed in Figure 4.1.

4.6.2 One (1) odour-related complaint was received on 25 March 2015 and followed up by the Environmental Team in the reporting month. The details of the complaint are described in Section 4.6.4 and the full complaint investigation report is annexed in Appendix M.

4.6.3 No notification of summons and successful prosecution was received in the reporting month.

4.6.1 EPD referred a water complaint on 25 March 2015.

4.6.2 The complainant complained about the generation of the smell of gasoline from the Widening of Fanling Highway construction site on Tai Wo Service Road West, causing serious nuisance to nearby houses.

4.6.3 The situation has continued for a few weeks and she asked the EPD to follow up as soon as possible.

4.6.4 Statistics on complaints, notifications of summons and successful prosecutions are summarized in Appendix L.

5 FUTURE KEY ISSUES

5.1 Construction Programme for the Coming Months

5.1.1 The major construction works for the Contract in April 2015 will be:-

- Site clearance
- Ground investigation
- Piling works
- Pipe laying
- Retaining wall construction
- Noise barrier
- Excavation
- Backfilling
- Drainage
- Temporary bridge construction
- House construction
- Box culvert construction
- Footbridge demolition
- Bridge construction

5.2 Key Issues for the Coming Month

5.2.1 Key issues to be considered in April 2015:-

- Properly store and label oils and chemicals on site;
- Chemical, chemical waste and waste management;
- Collection of construction waste should be carried out regularly;
- Properly maintain all drainage facilities and wheel washing facilities on site;
- Exposed slopes should be covered up properly if no temporary work will be conducted;
- Quieter powered mechanical equipment should be used;
- Suppress dust generated from excavation activities and haul road traffic; and
- Tree protective measures for all retained trees should be well maintained.

5.3 Monitoring Schedule for the Coming Month

5.3.1 The tentative schedule for environmental monitoring in April 2015 is provided in Appendix F.

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

6.1.1 The construction phase and EM&A programme of the Contract commenced on 21 November 2013.

6.1.2 All 1-hour and 24-hour TSP monitoring results complied with the Action / Limit Levels in the reporting period.

6.1.3 No Action or Limit Level exceedance of construction noise was recorded in the reporting month. No noise complaints related to 0700 – 1900 hours on normal weekdays was received and followed by Environmental Team in the reporting month.

6.1.4 5 environmental site inspections were carried out in March 2015. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site audits.

6.1.5 One (1) odour-related complaint was received on 25 March 2015 and followed up by the Environmental Team in the reporting month. The details of the complaint are described in Section 4.6.4 and the full complaint investigation report is annexed in Appendix M.

6.1.6 No notification of summons and successful prosecution was received in the reporting month.

6.2 Recommendations

6.2.1 According to the environmental site inspections performed in the reporting period, the following recommendations on remedial actions were provided to the Contractor for precautionary purpose:

Air Quality Impact

- Nil.

Construction Noise Impact

- Nil.

Water Quality Impact

- The Contractor was recommended to review their mechanism to collect muddy water to prevent muddy water from discharging to public areas by clearing the mud accumulating in the U-channel or carrying out equivalent measures.
- The Contractor was recommended to use another means such as pH papers to monitor the pH of the water in the sedimentation tank regularly.
- The Contractor was recommended to ensure all water discharged from the construction site has passed the sedimentation tank.

Chemical and Waste Management

- The Contractor was recommended to provide a drip tray to the oil drum to retain oil leakage, if any.
- The Contractor was recommended to stick appropriate labels on the chemical container.

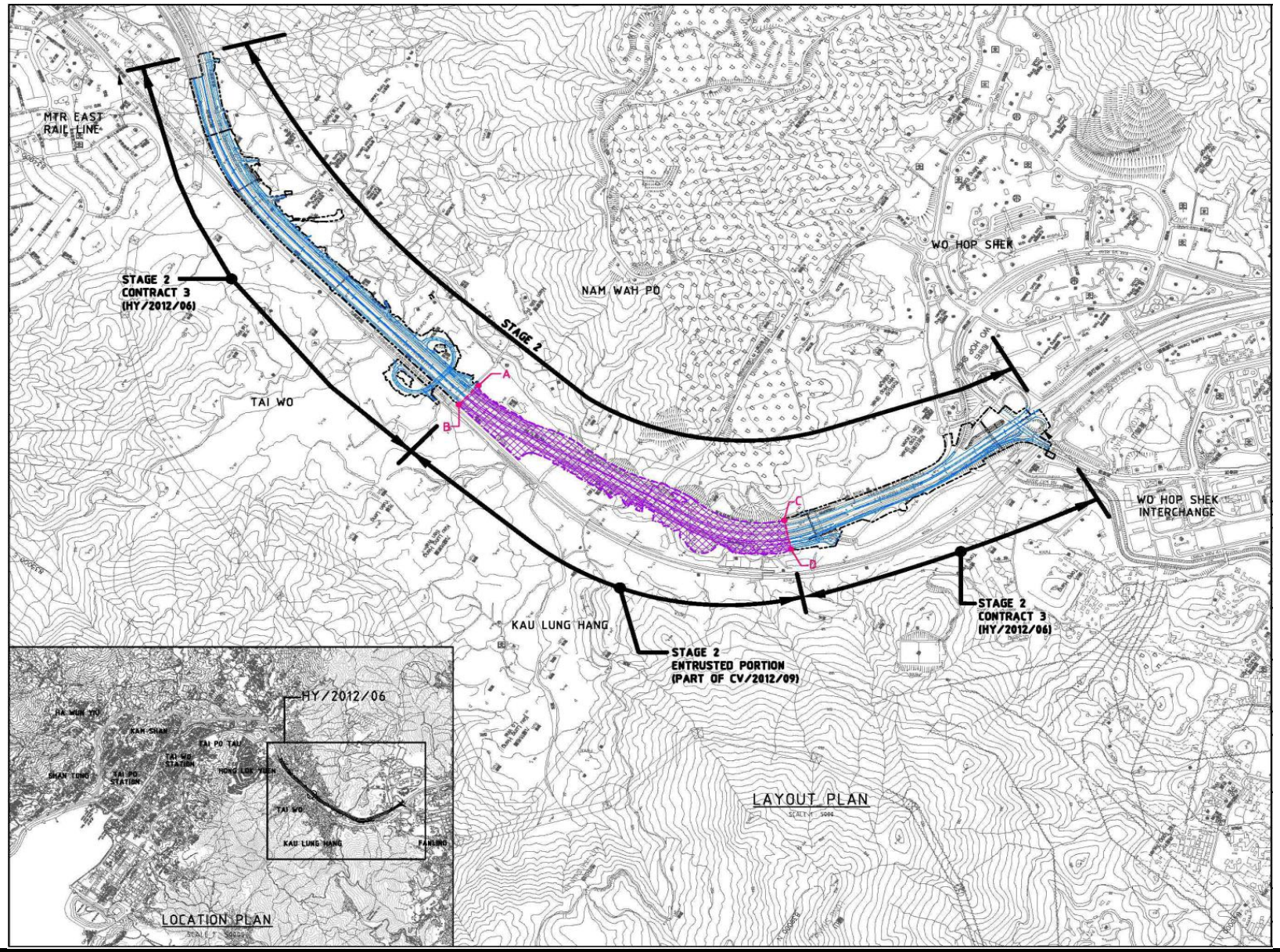
Landscape and Visual Impact

- Nil.

Miscellaneous

- The Contractor was recommended to post the latest version of Environmental Permit at all site entrances.
- The Contractor was recommended to clear the stagnant water to prevent mosquito breeding and clear the refuse to maintain site hygiene.

FIGURES



	EASTING	NORTHING
A	833867.6259	837386.5638
B	833945.6833	837375.1412
C	833721.8117	838310.5250
D	833782.3083	838375.1303

CONTRACT NO. HY/2012/06

WIDENING OF FANLING HIGHWAY

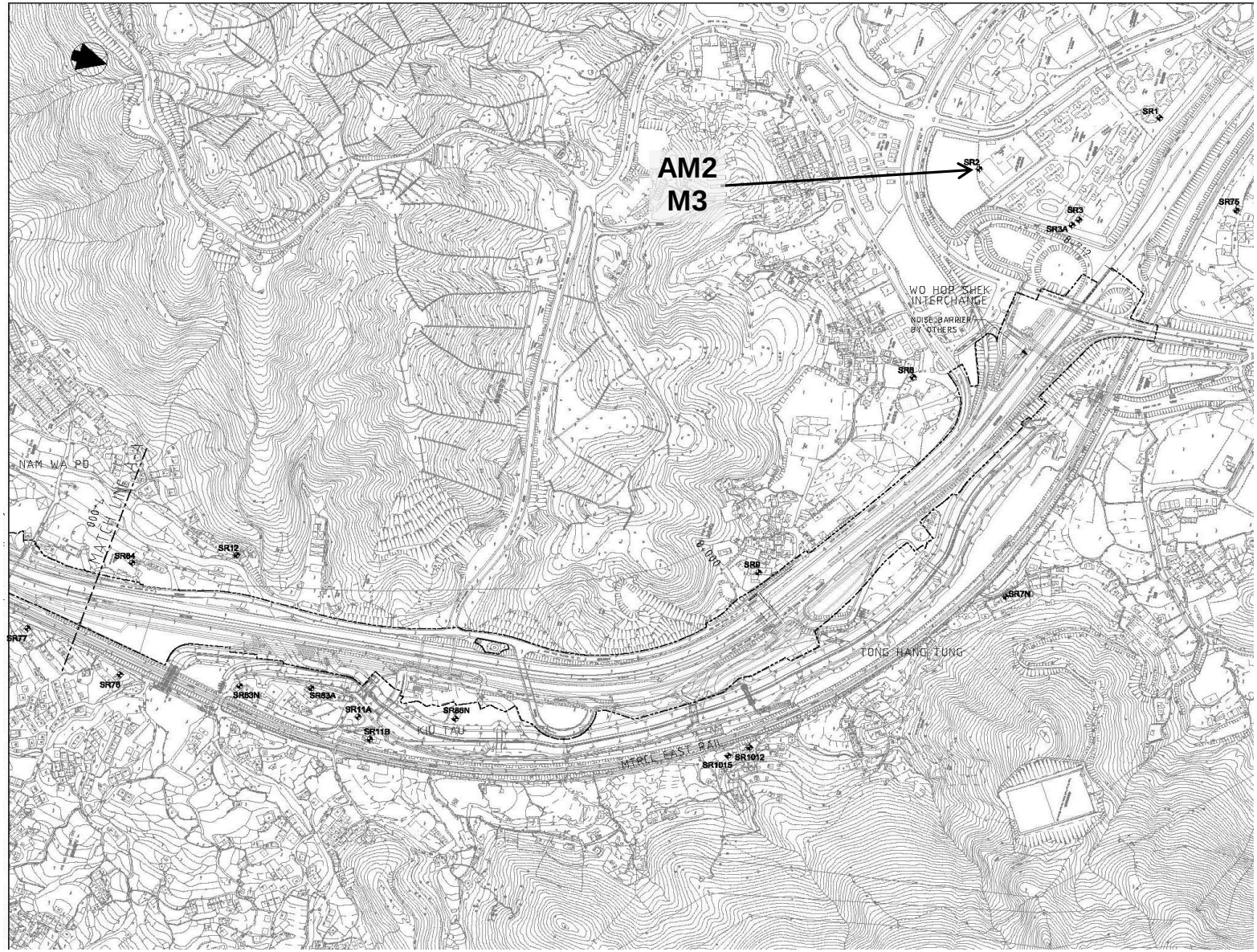
- TAI HANG TO WO HOP SHEK INTERCHANGE

AECOM

Layout Plan

Date: Dec 2013

Figure 1.1



CONTRACT NO. HY/2012/06

WIDENING OF FANLING HIGHWAY

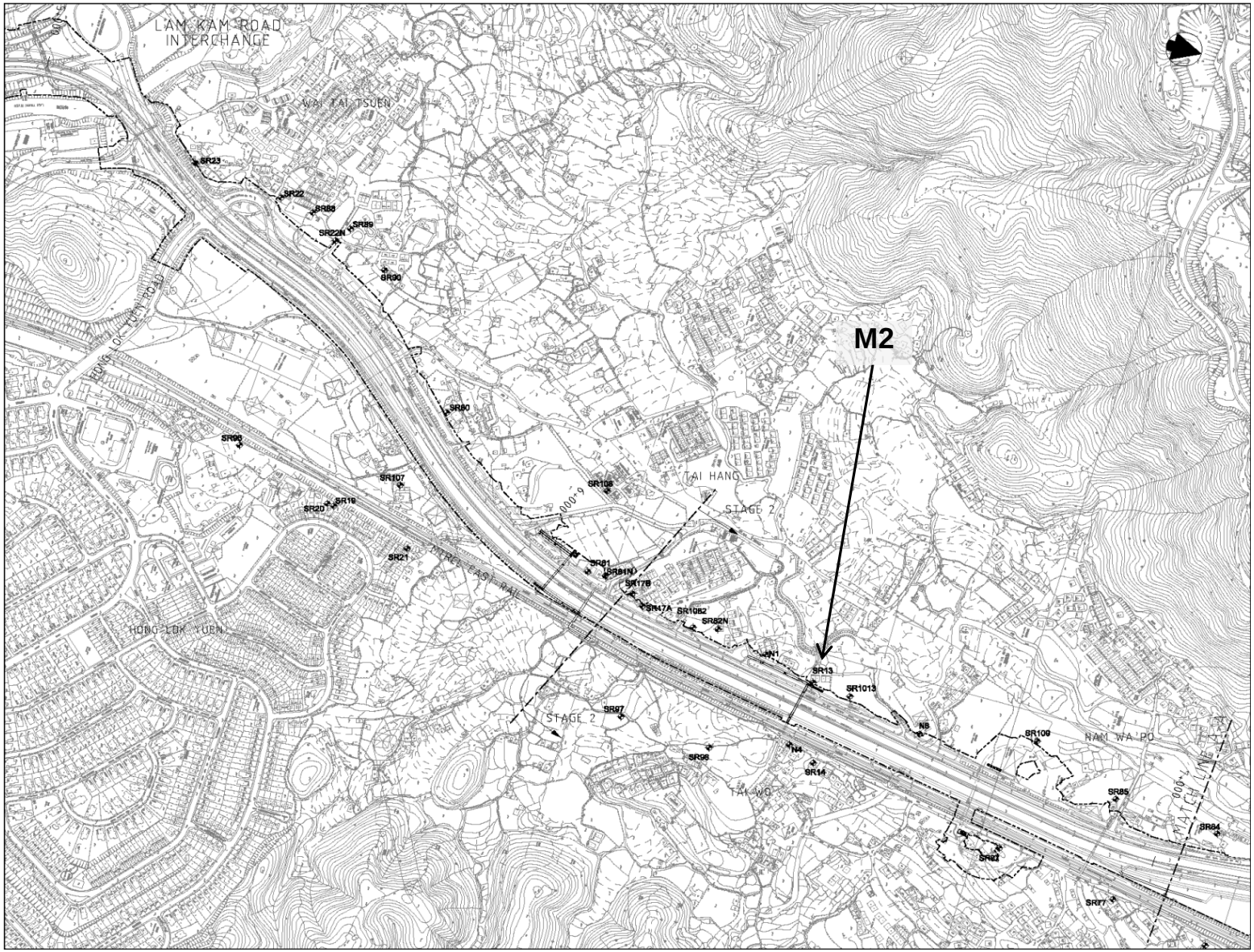
- TAI HANG TO WO HOP SHEK INTERCHANGE

AECOM

Locations of Monitoring Station

Date: Dec 2013

Figure 1.2a



CONTRACT NO. HY/2012/06

WIDENING OF FANLING HIGHWAY

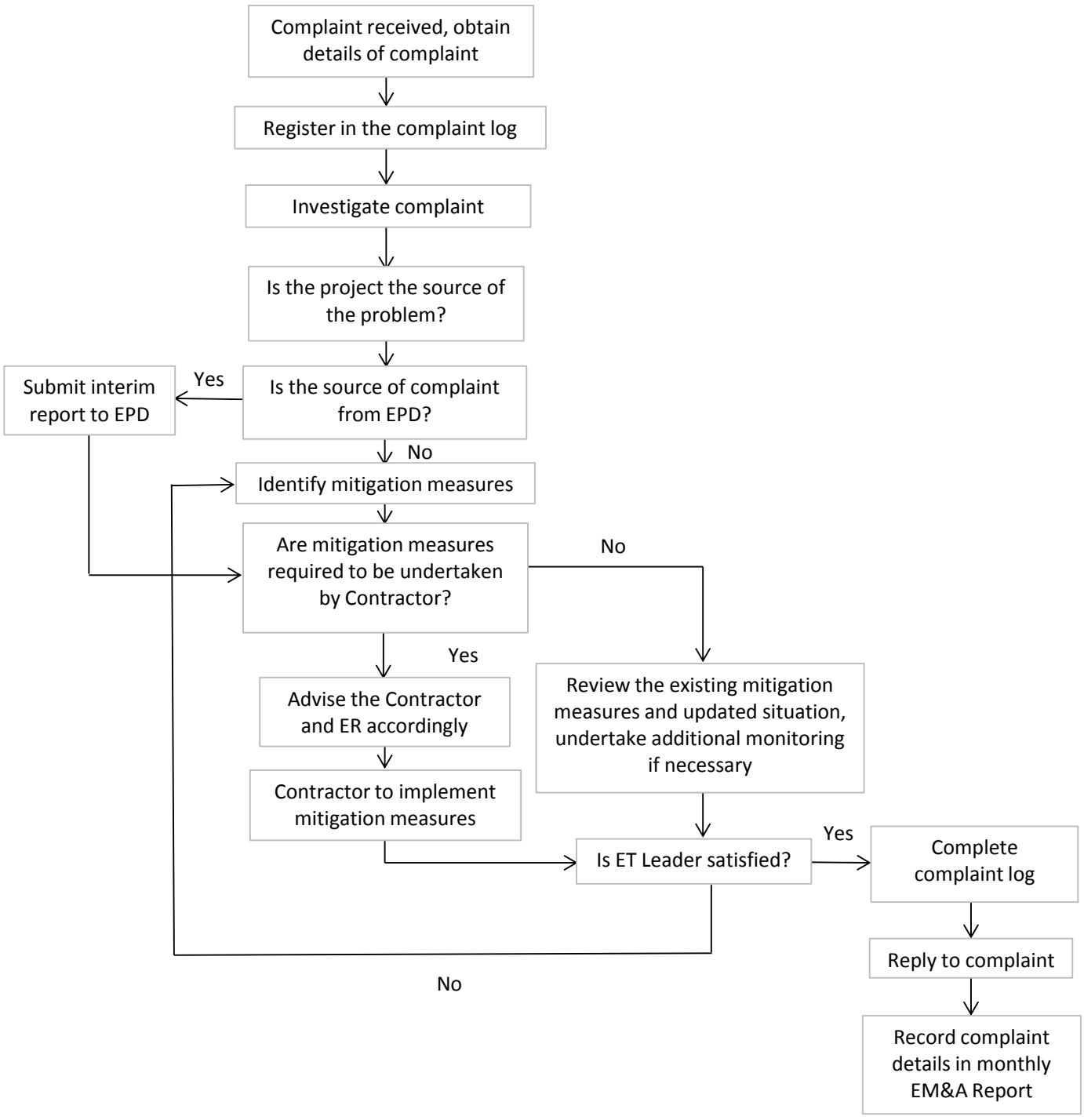
- TAI HANG TO WO HOP SHEK INTERCHANGE

AECOM

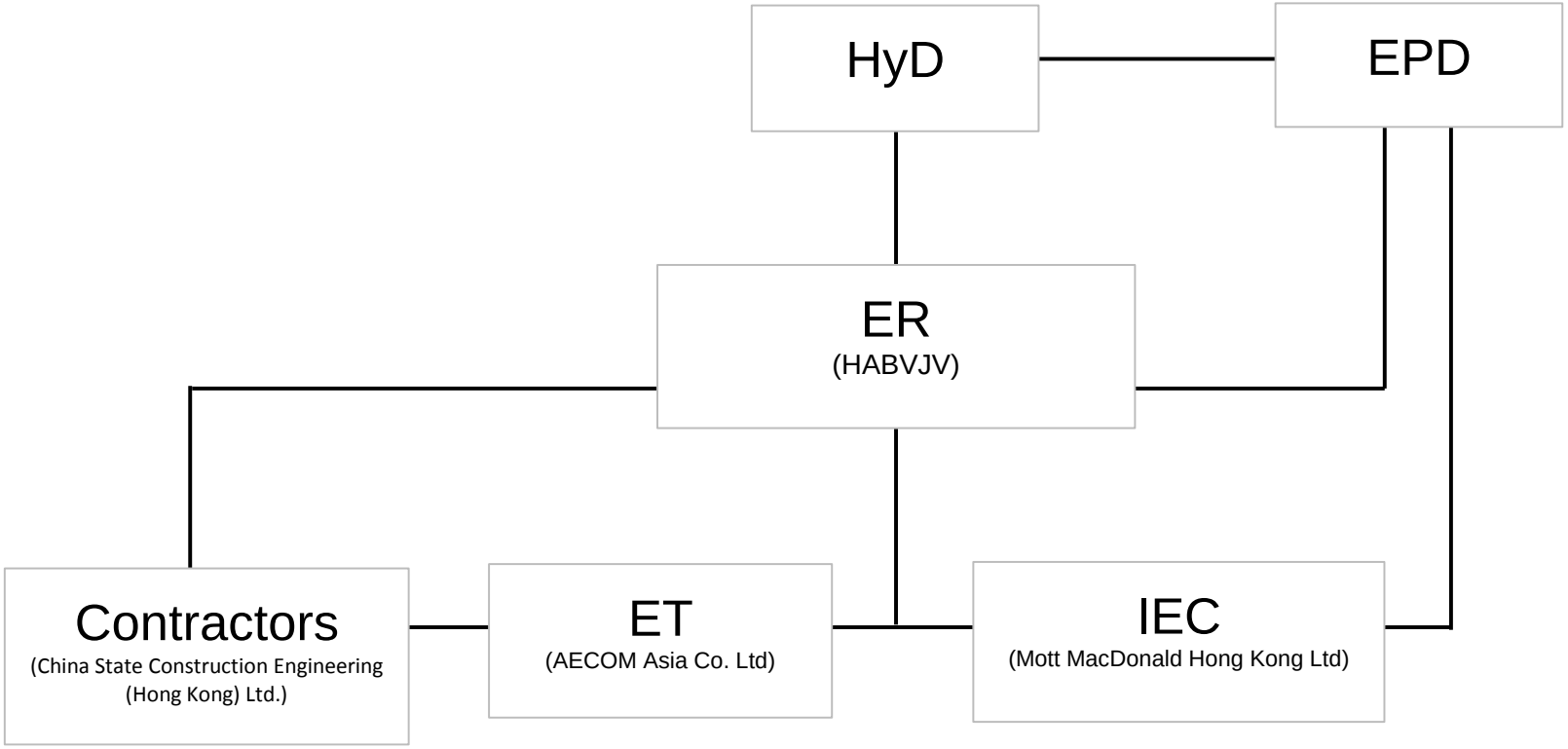
Locations of Monitoring Station

Date: Dec 2013

Figure 1.2b



APPENDIX A
PROJECT ORGANIZATION STRUCTURE



CONTRACT NO. HY/2012/06
WIDENING OF FANLING HIGHWAY
- TAI HANG TO WO HOP SHEK INTERCHANGE

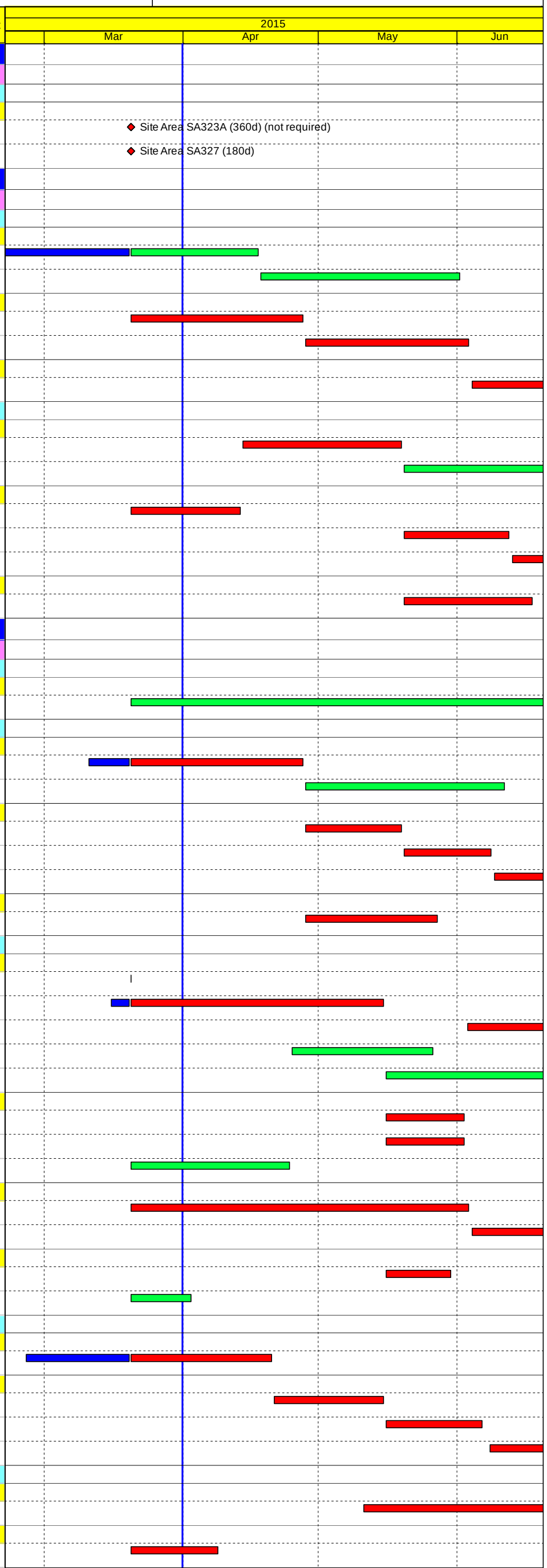
AECOM

Project Organization Structure

Project No.: 60307376 **Date: Dec 2013** **Appendix A**

APPENDIX B
CONSTRUCTION PROGRAMMES

Activity ID	Activity Name	Duration % Complete	Remaining Duration	Original Duration	Start	Finish	Total Float
Contract Condition							
General							
Contract Condition							
Contract Condition							
POSSA323A	Site Area SA323A (360d) (not required)	0%	0	0	20-Mar-15*		-250
POSSA327	Site Area SA327 (180d)	0%	0	0	20-Mar-15*		-78
ZONE 1 (Ch. 5640 to 5880)							
Noise Barrier Along TWSR-West and Laying New Utilities							
NB42 (Ch.5640-5740)-TWSR West Side							
Noise Barrier Works							
NB00110	NB42 (Ch5640-5740) - Footing & Wall Structure	51.11%	22	45	13-Feb-15 A	17-Apr-15	39
NB00120	NB42 (Ch5640-5740) - NB production	0%	45	45	18-Apr-15	01-Jun-15	1259
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10130	Watermain installation (along NB42)	0%	30	30	20-Mar-15	27-Apr-15	1
TSZ10140	Firemain installation (along NB42)	0%	30	30	28-Apr-15	03-Jun-15	1
Underground Utility Works							
UUZ10100	Utility cable laying by Utility companies (Along NB42)	0%	48	48	04-Jun-15	31-Jul-15	1
NB42A (Ch.5750-5810)-TWSR West Side							
Noise Barrier Works							
NB00190	NB42A (Ch5750-5810) - Footing & Wall Structure	0%	30	30	14-Apr-15	19-May-15	-83
NB00200	NB42A (Ch5750-5810) - NB production	0%	45	45	20-May-15	03-Jul-15	1227
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10150	Sheet Piling & Excavation(~5m below ground) (along NB42A)	0%	18	18	20-Mar-15	13-Apr-15	-83
TSZ10180	Watermain installation (along NB42A)	0%	20	20	20-May-15	12-Jun-15	-83
TSZ10190	Firemain installation (along NB42A)	0%	20	20	13-Jun-15	08-Jul-15	-83
Underground Utility Works							
UUZ10110	Utility cable laying by Utility companies (Along NB42A)	0%	24	24	20-May-15	17-Jun-15	-67
ZONE 2 (Ch. 5880 to 6930)							
Noise Barrier Along TWSR-West and Laying New Utilities							
Site Clearance & Demolition of Existing Structure							
Demolition Work							
Z2.P2N.1250	Construction of proposed SHRINE	0%	165	165	20-Mar-15	08-Oct-15	913
NB47 (Ch.5880-5930)-TWSR West Side							
Noise Barrier Works							
NB00270	NB47 (Ch5880-5930)- Footing & Wall Structure	0%	30	30	11-Mar-15 A	27-Apr-15	-290
NB00280	NB47 (Ch5880-5930)- NB production	0%	45	45	28-Apr-15	11-Jun-15	1249
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10260	DSD Trunk Sewer laying (along NB47)	0%	18	18	28-Apr-15	19-May-15	-290
TSZ10270	Backfill up to NB47 footing level	0%	16	16	20-May-15	08-Jun-15	-290
TSZ10280	Watermain installation (along NB47)	0%	26	26	09-Jun-15	10-Jul-15	-290
Underground Utility Works							
UUZ20100	Utility cable laying by Utility companies (Along NB47)	0%	24	24	28-Apr-15	27-May-15	-228
NB47A (Ch.5950-5975)-TWSR West Side							
Noise Barrier Works							
NB00300	NB47A - ID1-1 piling (0.19m -24no)(Delete)	0%	0	0	20-Mar-15	20-Mar-15	1724
NB00320	NB47A - ID1-1 Footing & Wall Structure	0%	45	45	16-Mar-15 A	15-May-15	-218
NB00330	NB47A - backfilling	0%	25	25	03-Jun-15	03-Jul-15	-218
NB00335	Backfilling (Along NB47A-above ID1)	0%	25	25	25-Apr-15	26-May-15	131
NB00340	NB47A - NB production	0%	45	45	16-May-15	29-Jun-15	1231
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10380	Watermain installation (along NB47A)	0%	14	14	16-May-15	02-Jun-15	-218
TSZ10390	Firemain installation (along NB47A)	0%	14	14	16-May-15	02-Jun-15	-218
TSZ10560	Watermain & Firemain installation (Along NB47A-above ID1)	0%	28	28	20-Mar-15	24-Apr-15	131
DSD Southern Trunk Sewer - Trenchless Construction							
TSZ11070	Construct Pipe jacking pits	0%	60	60	20-Mar-15	03-Jun-15	-86
TSZ11080	DSD Trunk Sewer laying (along NB47A - ID1-1)-Trenchless	0%	120	120	04-Jun-15	27-Oct-15	-86
Underground Utility Works							
UUZ20110	Utility cable laying by Utility companies (Along NB47A)	0%	12	12	16-May-15	30-May-15	-216
UUZ20240	Utility cable laying by Utility companies (Along NB47A-above	0%	12	12	20-Mar-15	02-Apr-15	147
NB48 (Ch.5995-6120)-TWSR West Side							
Noise Barrier Works							
NB00420	NB48 (NB48/5-10) piling (0.19m -64no)	75%	24	96	25-Feb-15 A	20-Apr-15	-189
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10400	Sheet Piling & Excavation(~5m below ground) (along NB48, 0-60m)	0%	21	21	21-Apr-15	15-May-15	-189
TSZ10410	DSD Trunk Sewer laying (along NB48, 0-60m)	0%	18	18	16-May-15	06-Jun-15	-189
TSZ10420	Backfill up to NB48, 0-60m footing level	0%	32	32	08-Jun-15	16-Jul-15	-189
NB49 (Ch.6145-6215)-TWSR West Side							
Noise Barrier Works							
NB00510	NB49 - Footing & Wall Structure	0%	52	52	11-May-15	13-Jul-15	5
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10500	Sheet Piling & Excavation(~7m below ground) (along NB49)	0%	14	14	20-Mar-15	08-Apr-15	5



Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Crit. Milestone

Project ID:DWP Rev 01 (1503)

Layout: 3 Month Rolling Program

Page 1 of 5

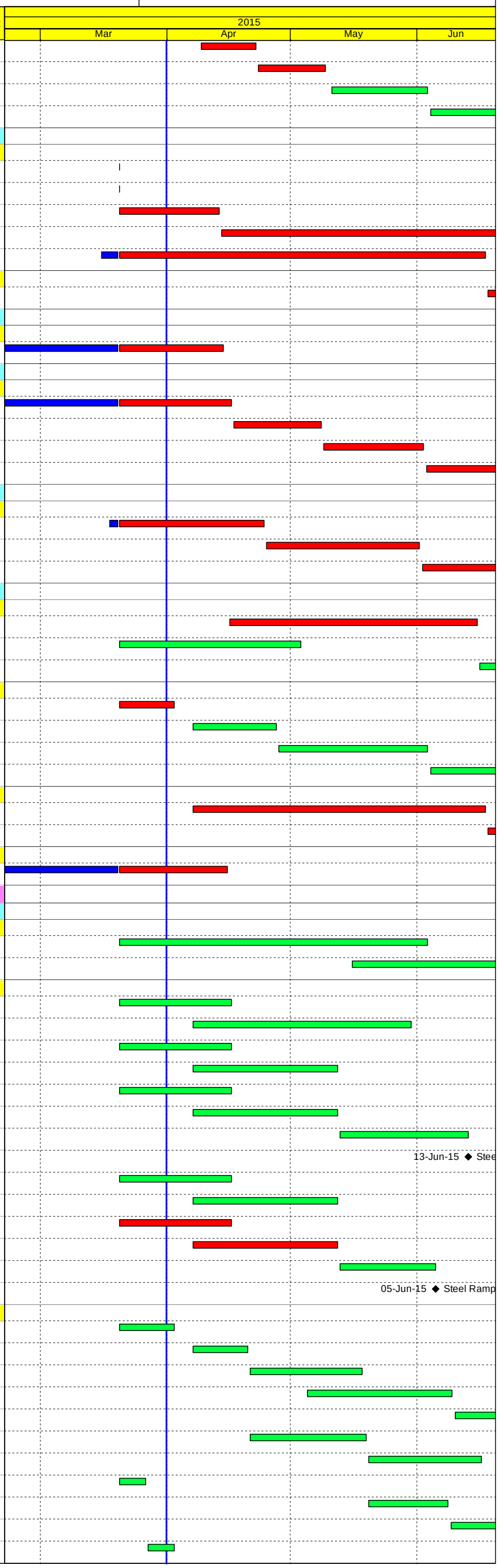
Contract No. HY/2012/06

Widening of Fanling Highway - Tai Hang to Wo Hop Shek Interchange

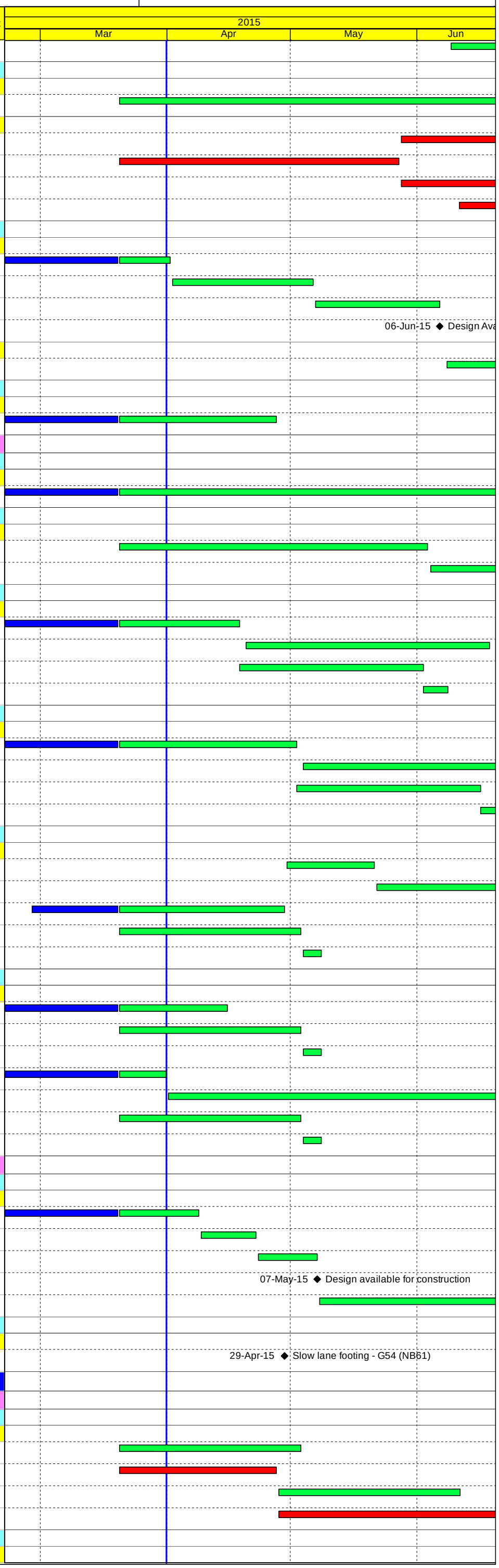
3 Month Rolling Program(20-Mar-15)

Date	Revision	C..	App...
22-Jan-14	IWP Rev 4		
26-Feb-14	IWP Rev 5		
13-May-...	WP Rev 1		
30-Jun-14	WP Rev...		

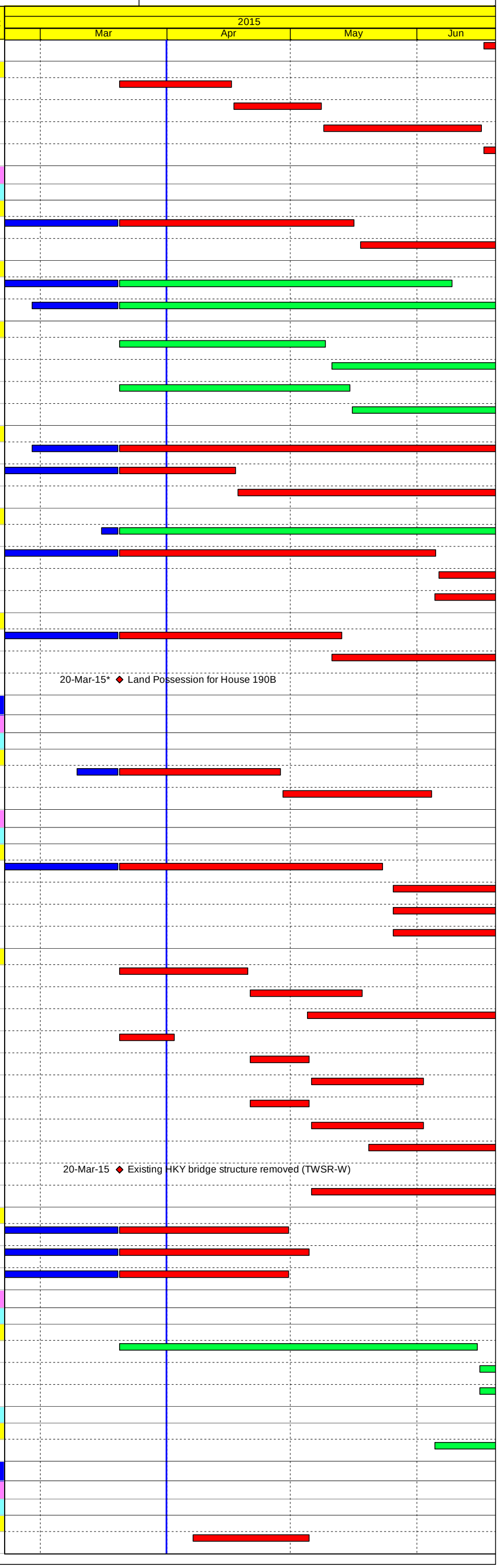
Activity ID	Activity Name	Duration % Complete	Remaining Duration	Original Duration	Start	Finish	Total Float
TSZ10510	DSD Trunk Sewer laying (along NB49)	0%	12	12	09-Apr-15	22-Apr-15	5
TSZ10520	Backfill up to NB49 footing level	0%	14	14	23-Apr-15	09-May-15	5
TSZ10530	Watermain installation (along NB49)	0%	20	20	11-May-15	03-Jun-15	17
TSZ10540	Firemain installation (along NB49)	0%	20	20	04-Jun-15	27-Jun-15	17
NB54 (Ch.6240-6280)-TWSR West Side							
Noise Barrier Works							
NB00605	NB54 - ID2-1 Pre-drilling) (Deleted notified on 14-5, VO issued	0%	0	0	20-Mar-15	20-Mar-15	-72
NB00610	NB54 - ID2-1 piling (0.19m -18no)-) (Deleted notified on 14-5, VO issued	0%	0	0	20-Mar-15	20-Mar-15	-72
NB00620	NB54 - ID2-1 Sheet piling & excavation (~3m)	0%	18	18	20-Mar-15	13-Apr-15	-28
NB00630	NB54 - ID2-1 Footing & Wall Structure	0%	60	60	14-Apr-15	25-Jun-15	-28
NB00670	NB54 piling (0.19m -24no)-1 rigs	0%	72	72	16-Mar-15 A	17-Jun-15	-144
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10600	Sheet Piling & Excavation(~5m below ground) (along NB54)	0%	14	14	18-Jun-15	06-Jul-15	-144
NB54A (Ch.6290-6350)-TWSR West Side							
Noise Barrier Works							
NB00740	NB54A piling (0.19m -72no)	82.41%	19	108	05-May-14 A	14-Apr-15	-33
NB57 (Ch.6365-6445)-TWSR West Side							
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10700	Sheet Piling & Excavation(~5m below ground) (along NB57)	0%	21	21	15-Dec-14 A	16-Apr-15	-174
TSZ10710	DSD Trunk Sewer laying (along NB57)	0%	18	18	17-Apr-15	08-May-15	-174
TSZ10720	Backfill up to NB57 footing level	0%	20	20	09-May-15	02-Jun-15	-174
TSZ10730	Watermain installation (along NB57)	0%	30	30	03-Jun-15	09-Jul-15	-132
NB59 (Ch.6490-6590)-TWSR West Side							
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10800	Sheet Piling & Excavation(~5m below ground) (along NB59)	0%	28	28	18-Mar-15 A	24-Apr-15	-133
TSZ10810	DSD Trunk Sewer laying (along NB59)	0%	30	30	25-Apr-15	01-Jun-15	-133
TSZ10820	Backfill up to NB59 footing level	0%	36	36	02-Jun-15	15-Jul-15	-133
NB63 (Ch.6610-6700)-TWSR West Side							
Noise Barrier Works							
NB01030	NB63 - backfilling	0%	50	50	16-Apr-15	15-Jun-15	-142
NB01040	NB63 - NB production	0%	45	45	20-Mar-15	03-May-15	1288
NB01050	NB63 - NB post & panel installation	0%	5	5	16-Jun-15	22-Jun-15	1003
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10300	Sheet Piling & Excavation(~7m below ground) (along NB63)	0%	12	12	20-Mar-15	02-Apr-15	-98
TSZ10310	DSD Trunk Sewer laying (along NB63)	0%	18	18	07-Apr-15	27-Apr-15	1634
TSZ10330	Watermain installation (along NB63)	0%	30	30	28-Apr-15	03-Jun-15	1634
TSZ10340	Firemain installation (along NB63)	0%	30	30	04-Jun-15	10-Jul-15	1634
DSD Southern Trunk Sewer - Trenchless Construction							
TSZ10950	Construct Pipe jacking pits	0%	60	60	07-Apr-15	17-Jun-15	-98
TSZ10960	DSD Trunk Sewer laying (along NB63 - ID3-1)-Trenchless	0%	120	120	18-Jun-15	10-Nov-15	-98
Underground Utility Works							
UUZ20230	Utility cable laying by Utility companies (Along NB63~100m)	58.33%	20	48	27-Dec-14 A	15-Apr-15	-142
Bridge Construction							
New Tai Hang Footbridge							
General							
THBF0330	Structure steel Shop drawing submission (THFB)	0%	60	60	20-Mar-15	03-Jun-15	452
THBF0335	Structure steel Shop drawing approval (THFB)	0%	30	30	16-May-15	22-Jun-15	452
TWSR-West/ FL Highway N/B Side Section							
THBF0130	THP5 - Pile Test	0%	28	28	20-Mar-15	16-Apr-15	846
THBF0140	THP5 - Pile cap, Pier and Pier Head	0%	45	45	07-Apr-15	30-May-15	675
THBF0170	THP8, THP9 - Pile Test	0%	28	28	20-Mar-15	16-Apr-15	972
THBF0180	THP8, THP9 - Pile cap, Pier and Pier Head	0%	30	30	07-Apr-15	12-May-15	780
THBF0210	THAB3 - Pile Test	0%	28	28	20-Mar-15	16-Apr-15	941
THBF0220	THAB3 - pile cap & abutment wall	0%	30	30	07-Apr-15	12-May-15	753
THBF0230	THAB3 - Backfilling (~4m)	0%	27	27	13-May-15	13-Jun-15	753
THBF0235	Steel Staircase ready for erection (THFB-TWSR-W side)	0%	0	0		13-Jun-15	753
THBF0260	THP6, THP7 - Pile Test	0%	28	28	20-Mar-15	16-Apr-15	864
THBF0270	THP6, THP7 - Pile cap, Pier and Pier Head	0%	30	30	07-Apr-15	12-May-15	690
THBF0300	THAB2 - Pile Test	0%	28	28	20-Mar-15	16-Apr-15	-170
THBF0310	THAB2 - pile cap & abutment wall	0%	30	30	07-Apr-15	12-May-15	-136
THBF0320	THAB2 - Backfilling (~3m)	0%	20	20	13-May-15	05-Jun-15	670
THBF0325	Steel Ramp ready for erection (THFB-TWSR-W side)	0%	0	0		05-Jun-15	670
TWSR-East FL Highway S/B Side Section							
THBF0440	THAB1 - Predrilling	0%	12	12	20-Mar-15	02-Apr-15	577
THBF0450	THAB1 - Pre-bored H pile (4 nos)	0%	12	12	07-Apr-15	20-Apr-15	577
THBF0460	THAB1 - Pile Test	0%	28	28	21-Apr-15	18-May-15	753
THBF0470	THAB1 - pile cap & abutment wall	0%	30	30	05-May-15	09-Jun-15	602
THBF0480	THAB1 - Backfilling (~3m)	0%	20	20	10-Jun-15	04-Jul-15	602
THBF0500	THP2 - Pre-bored H pile (8 nos)	0%	24	24	21-Apr-15	19-May-15	577
THBF0510	THP2 - Pile Test	0%	28	28	20-May-15	16-Jun-15	785
THBF0700	THP3 - Predrilling	0%	6	6	23-Mar-15 A	26-Mar-15	619
THBF0710	THP3 - Pre-bored H pile (4 nos)	0%	16	16	20-May-15	08-Jun-15	577
THBF0720	THP3 - Pile Test	0%	28	28	09-Jun-15	06-Jul-15	800
THBF0740	THP4 - Predrilling	0%	6	6	27-Mar-15	02-Apr-15	629



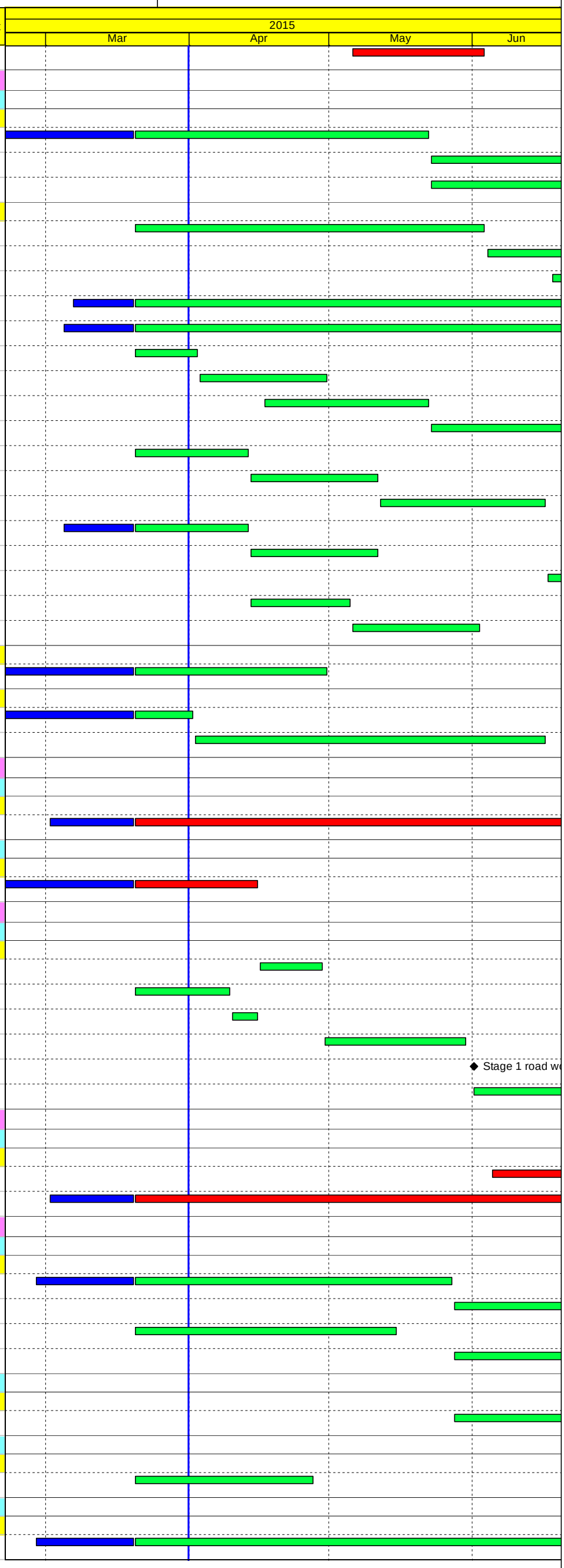
Activity ID	Activity Name	Duration % Complete	Remaining Duration	Original Duration	Start	Finish	Total Float
THBF0750	THP4 - Pre-bored H pile (4 nos)	0%	16	16	09-Jun-15	27-Jun-15	577
New Tai Wo Footbridge							
General							
TWFB1020	Structure steel Shop drawing submission (TWFB)	0%	90	90	20-Mar-15	10-Jul-15	673
TWSR-West/ FL Highway N/B Side Section							
TWFB1280	TWP4, TWP5 - Pre-bored H pile (14 nos)	0%	42	42	28-May-15	17-Jul-15	-193
TWFB1320	TWAB1 - Pre-bored H pile (18 nos)	0%	54	54	20-Mar-15	27-May-15	-210
TWFB1330	TWAB1 - Pile Test	0%	28	28	28-May-15	24-Jun-15	-266
TWFB1340	TWAB1 - pile cap & abutment wall	0%	30	30	11-Jun-15	17-Jul-15	-211
Temporary Tai Wo Footbridge							
Design Works							
TWFB-T1010	Design preparation	87.78%	11	90	01-Nov-14 A	01-Apr-15	183
TWFB-T1020	Engineer Comment	0%	26	26	02-Apr-15	06-May-15	183
TWFB-T1030	Design amendment	0%	26	26	07-May-15	06-Jun-15	183
TWFB-T1040	Design Available	0%	0	0		06-Jun-15	183
Construction Works							
TWFB-T1045	Sub-contractor procurement	0%	52	52	08-Jun-15	08-Aug-15	183
Demolition of Existing Tai Wo Footbridge							
TWSR-West/ FL Highway N/B Side Section							
TWFB-DE0900	Site Clearance	0%	30	30	01-Nov-14 A	27-Apr-15	491
Noise Barrier Along Fanling Highway S/B							
NB51 (Ch.5935-6055)-FH S/B Side							
Noise Barrier Works							
NB02280	NB51 ID1-3 (0-25m) - Footing & Wall Structure	5.56%	85	90	13-Feb-15 A	04-Jul-15	265
NB53 (Ch.6125-6300) -FH S/B Side (MTRC I&P Area)							
Noise Barrier Works							
NB02420	Coordinate with MTRC for Precautionary Measure	0%	60	60	20-Mar-15	03-Jun-15	429
NB02430	Precautionary Measure installation	0%	26	26	04-Jun-15	06-Jul-15	429
NB55 (Ch.6300-6360)-FH S/B Side (MTRC I&P Area)							
Noise Barrier Works							
NB02640	NB55 - Footing & Wall Structure	61.67%	23	60	07-Nov-14 A	18-Apr-15	479
NB02650	NB55- backfilling	0%	50	50	20-Apr-15	18-Jun-15	479
NB02660	NB55 - NB production	0%	45	45	18-Apr-15	02-Jun-15	1258
NB02670	NB55 - NB post & panel installation	0%	5	5	02-Jun-15	08-Jun-15	1014
NB56 (Ch.6360-6400)-FH S/B Side (MTRC I&P Area)							
Noise Barrier Works							
NB02710	NB56 - Footing & Wall Structure	43.33%	34	60	20-Dec-14 A	02-May-15	1003
NB02720	NB56- backfilling	0%	50	50	04-May-15	03-Jul-15	1640
NB02730	NB56 - NB production	0%	45	45	02-May-15	16-Jun-15	1244
NB02740	NB56 - NB post & panel installation	0%	5	5	16-Jun-15	23-Jun-15	1002
NB61 (Ch.6400-6560)-FH S/B Side (MTRC I&P Area)							
Noise Barrier Works							
NB02770	NB61 (0-50m) - Sheet piling & Excavation	0%	18	18	30-Apr-15	21-May-15	937
NB02780	NB61 (0-50m) - Footing & Wall Structure	0%	50	50	22-May-15	22-Jul-15	937
NB02840	NB61 (50-160m) - backfilling	36%	32	50	27-Feb-15 A	29-Apr-15	937
NB02850	NB61 (50-160m) - NB production	0%	45	45	20-Mar-15	03-May-15	1288
NB02860	NB61 (50-160m) - NB post & panel installation	0%	5	5	04-May-15	08-May-15	1039
NB61A (Ch.6560-6745)-FH S/B Side (MTRC I&P Area)							
Noise Barrier Works							
NB02910	NB61A (0-50m)- backfilling	60%	20	50	20-Jan-15 A	15-Apr-15	1704
NB02920	NB61A (0-50m) - NB production	0%	45	45	20-Mar-15	03-May-15	1288
NB02930	NB61A (0-50m) - NB post & panel installation	0%	5	5	04-May-15	08-May-15	1039
NB02960	NB61A ID2-3 (50-75m)- Sheet piling & Excavation	0%	10	10	21-Jan-15 A	31-Mar-15	943
NB02970	NB61A ID2-3 (50-75m) - Footing & Wall Structure	0%	70	70	01-Apr-15	27-Jun-15	943
NB03040	NB61A (75-190m) - NB production	0%	45	45	20-Mar-15	03-May-15	1288
NB03050	NB61A (75-190m) - NB post & panel installation	0%	5	5	04-May-15	08-May-15	1039
Other Works							
Site Clearance & Demolition of Existing Structure							
Contract Condition							
MCLT1030	Design Preparation	46.15%	14	26	06-Aug-14 A	08-Apr-15	910
MCLT1040	Engineer approval	0%	12	12	09-Apr-15	22-Apr-15	910
MCLT1050	Apply cert for exemption by DLO by Engineer	0%	12	12	23-Apr-15	07-May-15	910
MCLT1060	Design available for construction	0%	0	0		07-May-15	910
MCLT1080	Construct New MCLT (Structure)	0%	60	60	08-May-15	20-Jul-15	910
TCSS Works							
G54							
TCSS1500	Slow lane footing - G54 (NB61)	0%	0	0		29-Apr-15	1016
South Buffer Zone 1 (SBZ1) (within Zone 2)(Ch.6740 to 6930)							
Noise Barrier Along TWSR-West and Laying New Utilities							
NB63A (Ch.6710-6840)-TWSR West Side							
Noise Barrier Works							
NB01090	NB63A-1 - NB production	0%	45	45	20-Mar-15	03-May-15	648
NB01120	NB63A-2 - Footing & Wall Structure (ch10.7-24.2)	0%	30	30	20-Mar-15	27-Apr-15	-20
NB01140	NB63A-2 - NB production	0%	45	45	28-Apr-15	11-Jun-15	609
NB01170	NB63A-3 - Footing & Wall Structure (ch24.2-86.9)	0%	50	50	28-Apr-15	27-Jun-15	-20
NB64 & NB64A (Ch.6860-6920)-TWSR West Side							
Noise Barrier Works							



Activity ID	Activity Name	Duration % Complete	Remaining Duration	Original Duration	Start	Finish	Total Float
NB001030	NB64 & NB64A -Footing & Wall Structure	0%	30	30	17-Jun-15	23-Jul-15	-175
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10900	Sheet Piling & Excavation(~5m below ground) (along NB64)	0%	21	21	20-Mar-15	16-Apr-15	-175
TSZ10910	DSD Trunk Sewer laying (along NB64)	0%	18	18	17-Apr-15	08-May-15	-175
TSZ10920	Backfill up to NB64 footing level	0%	32	32	09-May-15	16-Jun-15	-175
TSZ10930	Watermain installation (along NB64)	0%	30	30	17-Jun-15	23-Jul-15	-175
Bridge Construction							
Kau Lung Hang Vehicular Bridge							
KLH Bridge - West Ramp							
Z2.KLH.1002	West Abutment- Pile cap & Structural Wall	48.89%	46	90	20-Dec-14 A	16-May-15	-108
Z2.KLH.1140	West Ramp - Backfilling (5m-Dx112m-L)	0%	140	140	18-May-15	03-Nov-15	-108
KLH Bridge - Deck 1							
Z2.KLH.1014	Pier VBP1- Pile caps, pier and pier head construction	27.78%	65	90	11-Feb-15 A	09-Jun-15	13
Z2.KLH.1022	Pier VBP2- Pile caps, pier and pier head construction	0%	90	90	27-Feb-15 A	10-Jul-15	88
KLH Bridge - Ramp R1							
Z2.KLH.1450	Ramp R1 - Pile caps and pier construction (R1P1)	0%	40	40	20-Mar-15	09-May-15	147
Z2.KLH.1660	Ramp R1 - Pile caps and pier construction (R1P2)	0%	40	40	11-May-15	27-Jun-15	147
Z2.KLH.1710	Ramp R1 - Abutment R1 - base slab & wall	0%	45	45	20-Mar-15	15-May-15	192
Z2.KLH.1720	Ramp R1 - Abutment R1 - Top slab	0%	30	30	16-May-15	22-Jun-15	192
KLH Bridge - Deck 3							
Z2.KLH.1360	VBP6 - Pile cap, pier construction	0%	90	90	27-Feb-15 A	10-Jul-15	-108
Z2.KLH.1810	East Abutment - Pile caps, abutment wall construction	70.67%	22	75	20-Oct-14 A	17-Apr-15	-130
Z2.KLH.1890	VBP8 - Pile caps, pier and pier head construction	0%	75	75	18-Apr-15	18-Jul-15	-130
KLH Bridge - Deck 2							
Z2.KLH.1144	Deck 2 Precast concrete beam production (30 beams)	0%	150	150	16-Mar-15 A	16-Aug-15	90
Z2.KLH.1220	VBP5- Pile cap, pier, pier head construction	22.5%	62	80	20-Nov-14 A	05-Jun-15	-68
Z2.KLH.1222	VBP5 - Backfilling & Road Work for TTA for VBP4	0%	14	14	06-Jun-15	23-Jun-15	-12
Z2.KLH.1255	Relocate MTRC OHL for deck construction	0%	30	30	05-Jun-15	11-Jul-15	-97
KLH Bridge - Ramp R2							
Z2.KLH.1520	Ramp R2 - Pre-bored H-pile piling works (18 Nos.)	20.37%	43	54	27-Jun-14 A	13-May-15	-13
Z2.KLH.1530	Ramp R2 - Pile cap, abutment and pier construction	0%	120	120	11-May-15	02-Oct-15	-13
Z2.KLH.1590	Land Possession for House 190B	0%	0	0		20-Mar-15	-134
North Buffer Zone 2 (NBZ2) (within Zone 4) (Ch. 7925 to 8100)							
Site Formation							
Retaining Wall W76							
Structure Works							
Z4SF1090	Watermains installation	0%	31	21	10-Mar-15 A	28-Apr-15	-184
Z4SF1110	Backfilling up to road finishes level	0%	30	30	29-Apr-15	04-Jun-15	-184
Bridge Construction							
New Ho Ka Yuen Footbridge							
General							
HKY1050	Structure steel procurement (HKYB)	56.67%	65	150	10-Dec-14 A	23-May-15	-226
HKY1060	Steel Staircase & Ramp prefabrication (HKYB-TWSR-W	0%	30	30	26-May-15	30-Jun-15	-125
HKY1080	Steel Staircase & Ramp prefabrication (HKYB-TWSR-E side)	0%	40	40	26-May-15	13-Jul-15	-180
HKY1100	Steel Bridge prefabrication (HKYB)	0%	50	50	26-May-15	24-Jul-15	-79
TWSR-West/ FL Highway N/B Side Section							
HKY1150	HKYP6 - Pre-bored H pile (8 nos)	0%	24	24	20-Mar-15	20-Apr-15	-189
HKY1160	HKYP6 - Pile Test	0%	28	28	21-Apr-15	18-May-15	-136
HKY1170	HKYP6 - Pile cap, Pier and Pier Head	0%	45	45	05-May-15	27-Jun-15	-102
HKY1172	HKYP1 - Predrilling	0%	12	12	20-Mar-15	02-Apr-15	-82
HKY1174	HKYP1 - Pre-bored H pile (4 nos)	0%	12	12	21-Apr-15	05-May-15	-82
HKY1176	HKYP1 - Pile Test	0%	28	28	06-May-15	02-Jun-15	-95
HKY1230	HKYAB3 - Pre-bored H pile (4 nos)	0%	12	12	21-Apr-15	05-May-15	-189
HKY1240	HKYAB3 - Pile Test	0%	28	28	06-May-15	02-Jun-15	-116
HKY1250	HKYAB3 - pile cap & abutment wall	0%	30	30	20-May-15	25-Jun-15	-88
HKY1275	Existing HKY bridge structure removed (TWSR-W)	0%	0	0		20-Mar-15	-43
HKY1330	HKYAB4 - Pre-bored H pile (16 nos)	0%	48	48	06-May-15	03-Jul-15	-189
TWSR-East FL Highway S/B Side Section							
HKY1580	HKYP3 - Pile cap, Pier and Pier Head	26.67%	33	45	24-Nov-14 A	30-Apr-15	-121
HKY1760	HKYP4 - Pile cap, Pier and Pier Head	20%	36	45	15-Oct-14 A	05-May-15	-94
HKY1800	HKYP5 - Pile cap, Pier and Pier Head	26.67%	33	45	18-Sep-14 A	30-Apr-15	-91
TWSR-East Construction							
NB74 (Ch.7930-7980)-FH S/B Side							
Noise Barrier Works							
NB4005	NB74 - Footing & Wall Structure	0%	70	70	20-Mar-15	15-Jun-15	138
NB4010	NB74 - backfilling	0%	30	30	16-Jun-15	22-Jul-15	138
NB4020	NB74 - NB production	0%	45	45	16-Jun-15	30-Jul-15	1200
Drainage & Road Works							
TWSR-East FL Highway S/B Side Section							
TWSRE1000	Road work for New TWSR-East	0%	150	150	05-Jun-15	02-Dec-15	13
ZONE 4 (Ch. 7925 to 8700)							
Noise Barrier Along TWSR-West and Laying New Utilities							
NB75 (Ch.7930-8090)-FH N/B Side							
Noise Barrier Works							
NB4100	NB75 -Pre-drilling (Ch7990-8000)-(HKY-P1)	0%	24	24	07-Apr-15	05-May-15	-82



Activity ID	Activity Name	Duration % Complete	Remaining Duration	Original Duration	Start	Finish	Total Float
NB4110	NB75 - piling (NB75/06, 0.19m -8no)-with HKY-P1	0%	24	24	06-May-15	03-Jun-15	-82
Bridge Construction							
New Wo Hop Shek Pedestrian & Cycle Bridge							
General							
WHS1040	Structure steel procurement (WHSB)	57.33%	64	150	10-Dec-14 A	22-May-15	331
WHS1050	Steel Ramp prefabrication (WHSB)	0%	50	50	23-May-15	23-Jul-15	262
WHS1070	Steel Staircase prefabrication (WHSB)	0%	40	40	23-May-15	11-Jul-15	1633
TWSR-West/ FL Highway N/B Side Section							
WHS1160	WHSP2 - Pre-bored H pile (8 nos)	0%	60	24	23-Mar-15 A	03-Jun-15	156
WHS1170	WHSP2 - Pile Test	0%	28	28	04-Jun-15	01-Jul-15	188
WHS1180	WHSP2 - Pile cap, Pier and Pier Head	0%	45	45	18-Jun-15	11-Aug-15	156
WHS1200	WHSP6 - Pre-bored H pile (6 nos)	0%	78	18	07-Mar-15 A	25-Jun-15	187
WHS1224	WHSP7 - Pre-bored H pile (6 nos)	0%	96	18	05-Mar-15 A	17-Jul-15	210
WHS1240	WHSAB1 - Pre-bored H pile (4 nos)	0%	12	12	23-Mar-15 A	02-Apr-15	659
WHS1250	WHSAB1 - Pile Test	0%	28	28	03-Apr-15	30-Apr-15	827
WHS1260	WHSAB1 - pile cap & abutment wall	0%	30	30	17-Apr-15	22-May-15	662
WHS1270	WHSAB1 - Backfilling (~4m)	0%	27	27	23-May-15	25-Jun-15	662
WHS1894	WHSP3 - Pre-bored H pile (6 nos)	0%	18	18	20-Mar-15	13-Apr-15	239
WHS1896	WHSP3 - Pile Test	0%	28	28	14-Apr-15	11-May-15	290
WHS1898	WHSP3 - Pile cap, Pier and Pier Head	0%	30	30	12-May-15	16-Jun-15	232
WHS1910	WHSP4 - Pre-bored H pile (6 nos)	0%	18	18	05-Mar-15 A	13-Apr-15	277
WHS1920	WHSP4 - Pile Test	0%	28	28	14-Apr-15	11-May-15	344
WHS1930	WHSP4 - Pile cap, Pier and Pier Head	0%	30	30	17-Jun-15	23-Jul-15	232
WHS1950	WHSP5 - Pre-bored H pile (6 nos)	0%	18	18	14-Apr-15	05-May-15	286
WHS1960	WHSP5 - Pile Test	0%	28	28	06-May-15	02-Jun-15	358
Crossing Fanling Highway Section							
WHS1470	WHSP1 - Pile cap, Pier and Pier Head	36.54%	33	52	18-Jun-14 A	30-Apr-15	617
TWSR-East FL Highway S/B Side Section							
WHS2080	North Abutment Wall (AW1) -pile cap & abutment wall	81.67%	11	60	31-Jan-15 A	01-Apr-15	524
WHS2090	North Abutment Wall (AW1) - Backfilling (~6m)	0%	60	60	02-Apr-15	16-Jun-15	524
Slip Road Y Construction							
Drainage & Road Works							
TWSR-East FL Highway S/B Side Section							
RDZ41000	Construct Slip Rd Y (Ch8250-8370)(SA340) (Z4	16.84%	79	95	02-Mar-15 A	26-Jun-15	-326
Underground Utility Works							
DN600 and DN900 Watermain							
DN1030	DN600 & DN900 watermain laying (Ch7925-8050)(SA346)	83.33%	20	120	15-Nov-14 A	15-Apr-15	-52
VO - Wall 76A Construction							
Retaining Wall W76A							
TWSR-East FL Highway S/B Side Section							
W76A1020	W76A construction (bay 9)	0%	12	12	16-Apr-15	29-Apr-15	721
W76A1022	Watermain installation	0%	15	15	20-Mar-15	09-Apr-15	721
W76A1024	WSD installation for Caltex	0%	5	5	10-Apr-15	15-Apr-15	721
W76A1030	W76A backfilling work (bay 4,5,9)	0%	25	25	30-Apr-15	30-May-15	721
W76A1040	Stage 1 road work ready to start	0%	0	0	01-Jun-15		1667
W76A1050	Drainage work for Caltex access road	0%	150	150	01-Jun-15	27-Nov-15	721
Fanling Highway Construction							
Drainage & Road Works							
TWSR-East FL Highway S/B Side Section							
HKY1412	Construct temp road for TWSR-East & FH S/B diversion	0%	21	21	05-Jun-15	30-Jun-15	-184
RDZ41005	Construct FH S/B Lane 1,2 (Ch8250-8370)(SA340) (Z4	22%	78	100	02-Mar-15 A	25-Jun-15	-330
Other Works							
Retaining Wall W77A							
TWSR-East FL Highway S/B Side Section							
RWZ4.1060	Base slab & Wall (0-3m high)-RW77A (Ch.50-130)	10%	54	60	27-Feb-15 A	27-May-15	206
RWZ4.1070	Backfilling (0-3m) - RW77A (Ch.50-130)	0%	30	30	28-May-15	03-Jul-15	461
RWZ4.1075	Temp Shoring & Excavation	0%	45	45	20-Mar-15	15-May-15	215
RWZ4.1080	Base slab & Wall (3-7m high)-RW77A (Ch.0-50)	0%	90	90	28-May-15	11-Sep-15	206
Retaining Wall W77B							
TWSR-East FL Highway S/B Side Section							
RWZ4.1100	Base slab & Wall (0-3m high)-RW77B (Ch.0-40)	0%	60	60	28-May-15	07-Aug-15	281
Retaining Wall W78							
TWSR-East FL Highway S/B Side Section							
RWZ4.0900	Site Clearance	0%	30	30	20-Mar-15	27-Apr-15	365
TCSS Works							
TCSS Pre-Construction Works							
TCSS0100	Acquire Design Criteria from Drawing & procurement	10%	162	180	27-Feb-15 A	05-Oct-15	284



APPENDIX C
IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES (EMIS)

Appendix C - Implementation Schedule of Environmental Mitigation Measures (EMIS)

Air Quality – Schedule of Recommended Mitigation Measures

Impact	Mitigation Measures	Timing	Implementation Status
Air Quality during construction	Restricting heights from which materials are dropped, as far as practicable to minimize the fugitive dust arising from unloading/loading.	During construction	V
	All stockpiles of excavated materials or spoil of more than $50m^3$ shall be enclosed, covered or dampened during dry or windy conditions.		V
	Effective water sprays shall be used to control potential dust emission sources such as unpaved haul roads and active construction areas.		V
	All spraying of materials and surfaces shall avoid excessive water usage.		V
	Vehicles that have the potential to create dust while transporting materials shall be covered, with the cover properly secured and extended over the edges of the side and tail boards.		V
	Materials shall be dampened, if necessary, before transportation.		V
	Travelling speeds shall be controlled to reduce traffic induced dust dispersion and re-suspension within the site from the operating haul trucks.		V
	Vehicle washing facilities shall be provided to minimize the quantity of material deposited on public roads.		V

Noise – Schedule of Recommended Mitigation Measures

Impact	Mitigation Measures	Timing	Implementation Status
Noise during construction	Use of silenced plant or plant equipped with mufflers or dampers in substitute of ordinary plant.	During construction	V
	Reduce the number of equipment and their percentage on-time.		V
	3.5 m and 5.5 m high temporary noise barrier at culvert construction work area (Figure 2a of the Environmental Permit).		#
	3 m high temporary noise barrier along the northern edge of Bridge 12 at ground level (Figure 2b of the Environmental Permit).		#
	2 m high temporary noise barrier along the northern edge of Bridge 12 at bridge level (Figure 2b of the Environmental Permit).		#
	2.5 m high temporary noise barrier along Tai Wo Service Road West (Figure 2c of the Environmental Permit).		#
	3.5m and 7m high temporary noise barrier along Tai Wo Services Road West near Tai Hang (Figure 2c of the Environmental Permit).		#
	7 m high temporary noise barrier along Tai Wo Service Road West near Tai Wo Footbridge work area (Figure 2d of the Environmental Permit).		#
	7 m high temporary noise barrier near Kiu Tau Footbridge work area (Figure 2d of the Environmental Permit).		#
	2.5 m high temporary noise barrier near river diversion work area (Figure 2e of the Environmental Permit).		#

Water Quality – Schedule of Recommended Mitigation Measures

Impact	Mitigation Measures	Timing	Implementation Status
Water quality during construction	Demolition and reconstruction of bridges - Prevent off-site migration through use of sheet piles. - Minimise duration of works as far as practical. - All sewer and drainage connections should be sealed to prevent debris, soil, sand, etc, from entering public sewers/drains. - Site surface runoff should be settled to remove sand/silt before it is discharged into the existing storm drains.	During construction	V
	Road Widening Works, Earthworks and Culvert Extension Works - Wastewater generated from any concrete batching washdown of equipment or similar activities should be discharged into foul sewers, after the removal of settable solids, and pH adjustment as necessary. All sewage discharges from the study area should meet the TM standards and approval from EPD through the licensing process is required. - Sand traps, oil interceptors and other pollution prevention installations should be provided, properly cleaned and maintained. - Runoff from exposed working areas, unfinished slopes and from unlined temporary channels should be directed to stilling basins and/or silt traps before discharging to the drainage outfalls. - Regular inspections of stilling basins and/or silt traps are required to ensure that sediment is not conveyed into the existing drainage system. - Open stockpiles should be covered with a tarpaulin cover. - During the wet season, any exposed top soils should be covered with a tarpaulin, shotcreted or hydroseeded. - Sand and silt from wash-water from vehicle washing should be settled out before discharging into storm drains. - Fuels should be stored in bunded areas such that spillage can be easily collected.		@

Waste – Schedule of Recommended Mitigation Measures

Impact	Mitigation Measures	Timing	Implementation Status
Waste management during construction	General Waste - Transport of wastes off site as soon as possible. - Maintenance of accurate waste records. - Minimisation of waste generation for disposal (via reduction/recycling/re-use). - No on-site burning will be permitted. - Use of re-useable metal hoardings/signboards.	During construction	V
	Vegetation from site clearance - Segregation of materials to facilitate disposal. - Mulching to reduce bulk and where possible review opportunities for the possible beneficial use within landscaping areas.		V
	Demolition Wastes - Segregation of materials to facilitate disposal. - Appropriate stockpile management.		V
	Excavated Materials - Segregation of materials to facilitate disposal / reuse. - Appropriate stockpile management. - Re-use of excavated material on or off site (where possible). - Special handling and disposal procedures in the event that contaminated materials are excavated.		V
	Construction Wastes - Segregation of materials to facilitate recycling/reuse (within designated area in appropriate containers/stockpiles). - Appropriate stockpile management. - Planning to reduce over ordering and waste generation. - Recycling and re-use of materials where possible (e.g. metal, wood from formwork) - For material which cannot be re-used/recycled, collection should be carried out by an approved waste contractor for landfill disposal.		V
	Bentonite Slurries - Bentonite slurries should be reused as far as possible. - Disposal in accordance with Practice Note For Professional Persons ProPECC PN 1/94.		#

	Chemical Wastes - Storage within locked, covered and bunded area. - The storage area shall not be located adjacent to sensitive receivers e.g. drains. - Minimise waste production and recycle oils/solvents where possible. - A spill response procedure shall be in place and absorption material available for minor spillages. - Use appropriate and labelled containers. - Educate site workers on site cleanliness/waste management procedures. - If chemical wastes are to be generated, the contractor must register with EPD as a chemical waste producer. - The chemical wastes shall be collected by a licensed chemical waste collector.		@
	Municipal Wastes - Waste shall be stored within a temporary refuse collection facility, in appropriate containers prior to collection and disposal. - Regular, daily collections are required by an approved waste collector.		V

Ecology – Schedule of Recommended Mitigation Measures

Impact	Mitigation Measures	Timing	Implementation Status
Ecology during construction	Accurate Delineation of Works Area - Boundaries of proposed works areas shall be clearly identified and separated from external areas by a physical barrier to prevent encroachment of adjacent habitats. - Individual trees which fall within the works areas but which work plans do not require removal are to be retained and fenced off to maximize protection.	During construction	V
	Vegetation Clearance - No fires shall be lit within the works area for the purpose of burning cleared vegetation. - The Contractor shall give consideration to mulching the cleared vegetation for recycling within the works area / adjacent land.		V
	Dust generation There are a number of measures which shall be taken as specified in the Air Pollution Control (Construction Dust) Regulation on 'Dust Control Requirements, including the following key measures to be applied during construction: - Vehicle washing facilities to be provided at every discernible or designated vehicle exit point; - All temporary site access roads shall be sprayed with water to suppress dust as necessary; - All dusty materials should be sprayed with water immediately prior to any handling; and - All debris should be covered entirely by impervious sheeting or stored in a sheltered debris collection area.		V
	Surface Run-off In general, mitigation measures shall be in accordance with ProPECC PN1/94 on 'Construction Site Drainage'. Key measures include: - Bund and cover stock piles to avoid run-off; - Channel any run-off through a system of oil, grease and sediment / silt traps and reuse water on site where ever practical; - All vehicle maintenance to be undertaken within a bunded area; and - Maximise vegetation retention on-site to maximise absorption (minimise transport).		V

Landscape and Visual Impact – Schedule of Recommended Mitigation Measures

Impact	Mitigation Measures	Timing	Responsibility
Landscape & Visual during construction	Preservation of Existing Vegetation - Trees identified for retention within the project limit would be protected during the works; - The tree transplanting and planting works shall be implemented by approved Landscape Contractors.	During construction	V
	Temporary Works Areas - Where feasible the works areas would be screened using hoarding and existing vegetation would be retained where possible to reduce the landscape and visual impacts arising from the construction activity. The landscape of these works areas would be restored following the completion of the construction phase.		V
	Hoarding - A hoarding would be erected where practicable in the most visually sensitive locations to screen the temporary construction works from the local VSRs.		V
	Top Soils - The works will result in disturbance to extensive areas of topsoil. Topsoil worthy of retention should be stockpiled for use following completion of the civil engineering works. It should either be temporarily vegetated with hydroseeded grass or turned over on a regular basis.		#
	Protection of Important Landscape Features - Important features such as temples, Island House and kilns within the study area, although remote from the proposed works retained and adequately protected.		#

Legend:
V = implemented;
x = not implemented;
@ = partially implemented;
+ = recommended and immediately implemented during the site inspection by the Contractor;
N/A = not applicable - No such work was undertaken or no such material was used on site;
= to be implemented.

APPENDIX D
SUMMARY OF ACTION AND LIMIT LEVELS

Appendix D - Summary of Action and Limit Levels

Table 1 – Action and Limit Levels for 1-hour TSP

Location	Action Level	Limit Level
AM2	317.8 μg/m3	500 μg/m3

Table 2 – Action and Limit Levels for 24-hour TSP

Location	Action Level	Limit Level
AM2	200.7 μg/m3	260 μg/m3

Table 3 – Action and Limit Levels for Construction Noise (0700-1900 hrs of normal weekdays)

Location	Action Level	Limit Level
M2	When one documented complaint, related to 0700 – 1900 hours on normal weekdays, is received from any one of the sensitive receivers	75 dB(A)
M3*		65/70 dB(A)

*Daytime noise Limit Level of 70 dB(A) applies to education institutions, while 65dB(A) applies during school examination period

APPENDIX E
CALIBRATION CERTIFICATES OF MONITORING EQUIPMENTS

AECOM

Total Suspended Particulates (TSP) Sampler
Field Calibration Report

Station	Fanling Government Secondary School (AM2)	Operator:	Shum Kam Yuen
Date:	27-Jan-15	Next Due Date:	27-Mar-15
Model No:	TE-5170	Verified Against:	O.T.S -- 988
Equipment No.:	A-001-74T	Expiration Date:	28-May-2015

Ambient Condition					
Temperature, Ta	292.0	Kelvin	Pressure, Pa	764.6	mmHg

Orifice Transfer Standard Information					
Equipment No.:	988	Slope, mc	1.97518	Intercept, bc	-0.01001
Last Calibration Date:	28-May-14	**mc x Qstd + bc = [H x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	28-May-15				

Calibration of TSP Sampler

Calibration Point	H in. of water	[H x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (m^3/min) **X - axis**	W in. of oil	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	6.5	2.58	1.31	4.6	2.17
2	5.3	2.33	1.19	3.6	1.92
3	4.4	2.13	1.08	3.0	1.76
4	3.5	1.90	0.96	2.5	1.60
5	2.2	1.50	0.77	1.6	1.28

By Linear Regression of Y on X

Slope , mw = **1.6025** **Intercept, bw =** **0.0442**

Correlation Coefficient* = **0.9975**

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.21 m^3/min (43 CFM)

From the Regression Equation, the "Y" value according to

m x Qstd + b = [W x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point W = (m x Qstd + b)^2 x (760 / Pa) x (Ta / 298) = **3.83**

*If Correlation Coefficient < 0.990, check and recalibrate again.

Remarks: _____

QC Reviewer: WS CHAN Signature: _____ Date: 28/01/15

AECOM

Total Suspended Particulates (TSP) Sampler
Field Calibration Report

Station: Fanling Government Secondary School (AM2)
Date: 27-Mar-15
Model No: TE-5170
Equipment No.: A-001-74T

Operator: Shum Kam Yuen
Next Due Date: 27-May-15
Verified Against: O.T.S -- 988
Expiration Date: 28-May-2015

Ambient Condition					
Temperature, Ta	294.0	Kelvin	Pressure, Pa	764.9	mmHg

Orifice Transfer Standard Information					
Equipment No.:	988	Slope, mc	1.97518	Intercept, bc	-0.01001
Last Calibration Date:	28-May-14	**mc x Qstd + bc = [H x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	28-May-15				

Calibration of TSP Sampler

Calibration Point	H in. of water	[H x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (m^3/min) **X - axis**	W in. of oil	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	6.6	2.59	1.32	4.5	2.14
2	5.5	2.37	1.20	3.6	1.92
3	4.4	2.12	1.08	3.0	1.75
4	3.6	1.92	0.98	2.5	1.60
5	2.4	1.56	0.80	1.5	1.24

By Linear Regression of Y on X

Slope , mw = **1.6929** **Intercept, bw =** **-0.0915**

Correlation Coefficient* = **0.9977**

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.21 m^3/min (43 CFM)

From the Regression Equation, the "Y" value according to

m x Qstd + b = [W x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point W = (m x Qstd + b)^2 x (760 / Pa) x (Ta / 298) = **3.75**

*If Correlation Coefficient < 0.990, check and recalibrate again.

Remarks:

QC Reviewer: WS CHAN Signature: [signature] Date: 27/3/15

TISCH Environmental

TISCH ENVIRONMENTAL, INC.
145 SOUTH MIAMI AVE
VILLAGE OF CLEVES, OH
45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - May 28, 2014 Rootsmeter S/N 0438320 Ta (K) - 296
Operator Tisch Orifice I.D. - 0988 Pa (mm) - 751.84

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3790	3.2	2.00
2	NA	NA	1.00	0.9720	6.4	4.00
3	NA	NA	1.00	0.8690	7.9	5.00
4	NA	NA	1.00	0.8260	8.8	5.50
5	NA	NA	1.00	0.6830	12.8	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9917	0.7191	1.4113		0.9957	0.7221	0.8874
0.9875	1.0159	1.9959		0.9915	1.0201	1.2549
0.9854	1.1339	2.2315		0.9894	1.1385	1.4030
0.9843	1.1916	2.3405		0.9883	1.1965	1.4715
0.9790	1.4333	2.8227		0.9829	1.4392	1.7747
Qstd slope (m) =		1.97518		Qa slope (m) =		1.23683
intercept (b) =		-0.01001		intercept (b) =		-0.00630
coefficient (r) =		0.99998		coefficient (r) =		0.99998
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{[SQRT(H2O(Pa/760)(298/Ta))]- b}
Qa = 1/m{[SQRT H2O(Ta/Pa)]- b}

EQUIPMENT CALIBRATION RECORD

Type: ***Laser Dust Monitor***
Manufacturer/Brand: ***SIBATA***
Model No.: ***LD-3***
Equipment No.: ***A.005.07a***
Sensitivity Adjustment Scale Setting: ***557 CPM***

Operator: *Mike Shek (MSKM)*

Standard Equipment

Equipment: *Rupprecht & Patashnick TEOM®*
Venue: *Cyberport (Pui Ying Secondary School)*
Model No.: *Series 1400AB*
Serial No: Control: *140AB219899803*
Sensor: *1200C143659803* K_o: *12500*
Last Calibration Date*: *10 May 2014*

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): *557* CPM
Sensitivity Adjustment Scale Setting (After Calibration): *557* CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **X-axis**
			Temp (°C)	R.H. (%)			
1	*11-05-14*	*09:30 - 10:30*	*26.7*	*75*	*0.04434*	*1775*	*29.58*
2	*11-05-14*	*10:30 - 11:30*	*26.7*	*75*	*0.04716*	*1880*	*31.33*
3	*11-05-14*	*11:30 - 12:30*	*26.8*	*76*	*0.04927*	*1964*	*32.73*
4	*11-05-14*	*12:30 - 13:30*	*26.8*	*75*	*0.05035*	*2015*	*33.58*

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
2. Total Count was logged by Laser Dust Monitor
3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X
Slope (K-factor): *0.0015*
Correlation coefficient: *0.9982*

Validity of Calibration Record: *11 May 2015*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 12 May 2014

EQUIPMENT CALIBRATION RECORD

Type:	***Laser Dust Monitor***
Manufacturer/Brand:	***SIBATA***
Model No.:	***LD-3B***
Equipment No.:	***A.005.14a***
Sensitivity Adjustment Scale Setting:	***786 CPM***
Operator:	*Mike Shek (MSKM)*

Standard Equipment

Equipment:	*Rupprecht & Patashnick TEOM®*		
Venue:	*Cyberport (Pui Ying Secondary School)*		
Model No.:	*Series 1400AB*		
Serial No:	Control: *140AB219899803*		
	Sensor: *1200C143659803*	K_o: *12500*	
Last Calibration Date*:	*10 May 2014*		

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): *786* CPM
Sensitivity Adjustment Scale Setting (After Calibration): *786* CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **X-axis**
			Temp (°C)	R.H. (%)			
1	*18-05-14*	*12:45 - 13:45*	*28.4*	*77*	*0.05027*	*2158*	*35.97*
2	*18-05-14*	*13:45 - 14:45*	*28.5*	*76*	*0.05161*	*2211*	*36.85*
3	*18-05-14*	*14:45 - 15:45*	*28.5*	*76*	*0.05235*	*2247*	*37.45*
4	*18-05-14*	*15:45 - 16:45*	*28.4*	*77*	*0.05203*	*2233*	*37.22*

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
2. Total Count was logged by Laser Dust Monitor
3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X
Slope (K-factor): *0.0014*
Correlation coefficient: *0.9969*

Validity of Calibration Record: *18 May 2015*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 19 May 2014

EQUIPMENT CALIBRATION RECORD

Type:	***Laser Dust Monitor***
Manufacturer/Brand:	***SIBATA***
Model No.:	***LD-3B***
Equipment No.:	***A.005.16a***
Sensitivity Adjustment Scale Setting:	***521 CPM***
Operator:	*Mike Shek (MSKM)*

Standard Equipment

Equipment:	*Rupprecht & Patashnick TEOM®*		
Venue:	*Cyberport (Pui Ying Secondary School)*		
Model No.:	*Series 1400AB*		
Serial No:	Control: *140AB219899803*		
	Sensor: *1200C143659803*	K_o: *12500*	
Last Calibration Date*:	*10 May 2014*		

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): *521* CPM
Sensitivity Adjustment Scale Setting (After Calibration): *521* CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **X-axis**
			Temp (°C)	R.H. (%)			
1	*26-07-14*	*10:30 - 11:30*	*28.6*	*77*	*0.04931*	*1971*	*32.85*
2	*26-07-14*	*11:45 - 12:45*	*28.6*	*77*	*0.05142*	*2052*	*34.20*
3	*26-07-14*	*13:15 - 14:15*	*28.7*	*77*	*0.05589*	*2243*	*37.38*
4	*26-07-14*	*14:40 - 15:40*	*28.8*	*78*	*0.05293*	*2116*	*35.27*

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
2. Total Count was logged by Laser Dust Monitor
3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X
Slope (K-factor): *0.0015*
Correlation coefficient: *0.9934*

Validity of Calibration Record: *26 July 2015*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 28 July 2014

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓
E-mail: smec@cigismec.com Website: www.cigismec.com
Tel : (852) 2873 6860
Fax : (852) 2555 7533

HOKLAS 028 CAL

CERTIFICATE OF CALIBRATION

Certificate No.: 14CA1106 04-01 **Page** 1 **of** 2

Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone
Manufacturer:	Rion Co., Ltd.	,	Rion Co., Ltd.
Type/Model No.:	NL-31	,	UC-53A
Serial/Equipment No.:	00320528 / N.007.03A	,	90565
Adaptors used:	-	,	-

Item submitted by

Customer Name:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	06-Nov-2014

Date of test: 07-Nov-2014

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	15-Jun-2015	CIGISMEC
Signal generator	DS 360	33873	09-Apr-2015	CEPREI
Signal generator	DS 360	61227	09-Apr-2015	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	65 ± 10 %
Air pressure:	1010 ± 10 hPa

Test specifications

1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.

2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.

3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsess of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 08-Nov-2014 **Company Chop:** SOILS & MATERIALS ENGINEERING COMPANY LTD 綜合試驗有限公司

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
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E-mail: smec@cigismec.com Website: www.cigismec.com
Tel : (852) 2873 6860
Fax : (852) 2555 7533
HOKLAS 028

CERTIFICATE OF CALIBRATION

Certificate No.: 14CA0702 01-01

Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone
Manufacturer:	B & K	,	B & K
Type/Model No.:	2238	,	4188
Serial/Equipment No.:	2800927 / N.009.06	,	2791211
Adaptors used:	-	,	-

Item submitted by

Customer Name:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	02-Jul-2014

Date of test: 03-Jul-2014

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	20-Jun-2015	CIGISMEC
Signal generator	DS 360	33873	09-Apr-2015	CEPREI
Signal generator	DS 360	61227	09-Apr-2015	CEPREI

Ambient conditions

Temperature:	21 ± 1 °C
Relative humidity:	60 ± 10 %
Air pressure:	1000 ± 10 hPa

Test specifications

1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.

2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.

3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsess of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 04-Jul-2014 **Company Chop:**

SOILS & MATERIALS ENGINEERING COMPANY LTD. 綜合試驗有限公司

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.
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Tel : (852) 2873 6860
Fax : (852) 2555 7533

HKLAS 028 CAL

CERTIFICATE OF CALIBRATION

Certificate No.: 14CA1106 04-02 **Page:** 1 **of** 2

Item tested

Description:	Acoustical Calibrator (Class 1)
Manufacturer:	Rion Co., Ltd.
Type/Model No.:	NC-73
Serial/Equipment No.:	10307223 / N.004.08
Adaptors used:	-

Item submitted by

Curstomer:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	06-Nov-2014

Date of test: 07-Nov-2014

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2412857	13-May-2015	SCL
Preamplifier	B&K 2673	2239857	10-Apr-2015	CEPREI
Measuring amplifier	B&K 2610	2346941	08-Apr-2015	CEPREI
Signal generator	DS 360	61227	09-Apr-2015	CEPREI
Digital multi-meter	34401A	US36087050	17-Dec-2014	CEPREI
Audio analyzer	8903B	GB41300350	07-Apr-2015	CEPREI
Universal counter	53132A	MY40003662	11-Apr-2015	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	65 ± 10 %
Air pressure:	1010 ± 10 hPa

Test specifications

1, The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.

2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.

3, The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on **page 2** of this certificate.

SOILS & MATERIALS ENGINEERING COMPANY LTD. 綜合試驗有限公司

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 08-Nov-2014 **Company Chop:**

Comments: The results reported in this certificate refer to the conditon of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong. Tel : (852) 2873 6860
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E-mail: smec@cigismec.com Website: www.cigismec.com
HOKLAS 028

CERTIFICATE OF CALIBRATION

Certificate No.: 14CA0408 01-02 **Page:** 1 **of** 2

Item tested

Description:	Acoustical Calibrator (Class 1)
Manufacturer:	Rion Co., Ltd.
Type/Model No.:	NC-74
Serial/Equipment No.:	34246490 N.004.10
Adaptors used:	Yes

Item submitted by

Curstomer:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	08-Apr-2014

Date of test: 15-Apr-2014

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2341427	17-Apr-2014	SCL
Preamplifier	B&K 2673	2239857	10-Apr-2015	CEPREI
Measuring amplifier	B&K 2610	2346941	08-Apr-2015	CEPREI
Signal generator	DS 360	61227	09-Apr-2015	CEPREI
Digital multi-meter	34401A	US36087050	17-Dec-2014	CEPREI
Audio analyzer	8903B	GB41300350	07-Apr-2015	CEPREI
Universal counter	53132A	MY40003662	11-Apr-2015	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	60 ± 10 %
Air pressure:	1000 ± 10 hPa

Test specifications

1, The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.

2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.

3, The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on **page 2** of this certificate.

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 23-Apr-2014 **Company Chop:** SOILS & MATERIALS ENGINEERING COMPANY LTD. 綜合試驗有限公司

Comments: The results reported in this certificate refer to the conditon of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

APPENDIX F
EM&A MONITORING SCHEDULES

Contract No. HY/2012/06
Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange
Impact Monitoring and Audit Schedule for March 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Mar	2-Mar	3-Mar	4-Mar	5-Mar	6-Mar	7-Mar
				1-hr TSP 24-hr TSP Noise		
8-Mar	9-Mar	10-Mar	11-Mar	12-Mar	13-Mar	14-Mar
			1-hr TSP 24-hr TSP Noise			
15-Mar	16-Mar	17-Mar	18-Mar	19-Mar	20-Mar	21-Mar
		1-hr TSP 24-hr TSP Noise				
22-Mar	23-Mar	24-Mar	25-Mar	26-Mar	27-Mar	28-Mar
	1-hr TSP 24-hr TSP Noise					1-hr TSP 24-hr TSP
29-Mar	30-Mar	31-Mar				

Contract No. HY/2012/06
Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange
Tentative Impact Monitoring and Audit Schedule for April 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Apr	2-Apr	3-Apr	4-Apr
				1-hr TSP 24-hr TSP Noise		
5-Apr	6-Apr	7-Apr	8-Apr	9-Apr	10-Apr	11-Apr
			1-hr TSP 24-hr TSP Noise			
12-Apr	13-Apr	14-Apr	15-Apr	16-Apr	17-Apr	18-Apr
	1-hr TSP 24-hr TSP Noise					1-hr TSP 24-hr TSP
19-Apr	20-Apr	21-Apr	22-Apr	23-Apr	24-Apr	25-Apr
					1-hr TSP 24-hr TSP Noise	
26-Apr	27-Apr	28-Apr	29-Apr	30-Apr		
				1-hr TSP 24-hr TSP Noise		

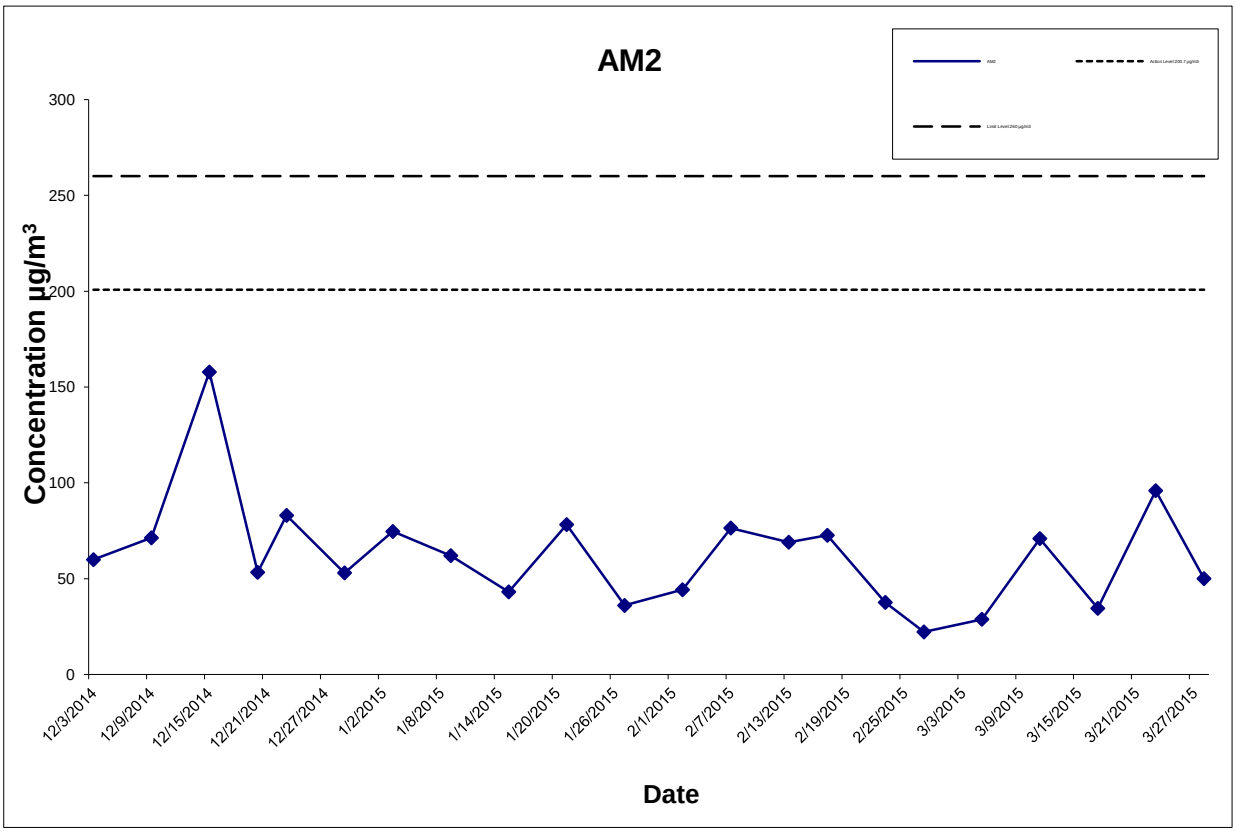
The schedule is subject to change due to unforeseeable circumstances (e.g. adverse weather, etc)

APPENDIX G
IMPACT AIR QUALITY MONITORING RESULTS AND THEIR GRAPHICAL PRESENTATION

Appendix G
Impact Air Quality Monitoring Results

24-hour TSP Monitoring Results at Station AM2 (Fanling Government Secondary School)

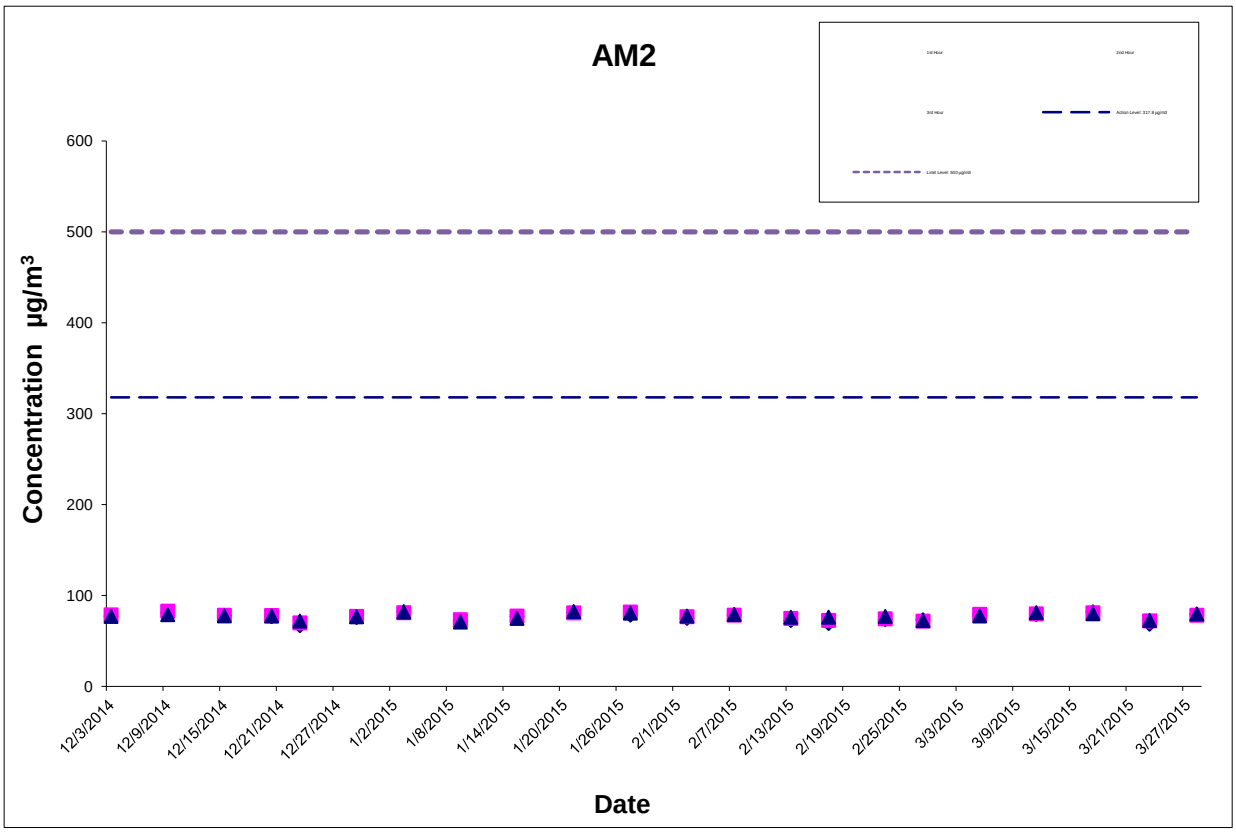
Date	Weather Condition	Air Temp. (^{o}C)	Atmospheric Pressure(hPa)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Filter Weight (g)		Particulate weight(g)	Elapse Time		Sampling Time(hrs.)	Conc. ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
				Initial	Final			Initial	Final		Initial	Final				
5-Mar-15	Cloudy	16.2	1016.6	1.314	1.314	1.314	1892.2	2.8665	2.9210	0.0545	5214.03	5238.03	24.00	28.8	200.7	260
11-Mar-15	Cloudy	16.2	1021.9	1.314	1.314	1.314	1892.2	2.8872	3.0214	0.1342	5238.03	5262.03	24.00	70.9	200.7	260
17-Mar-15	Fine	22.1	1013.0	1.314	1.314	1.314	1892.2	2.7475	2.8128	0.0653	5262.03	5286.03	24.00	34.5	200.7	260
23-Mar-15	Sunny	20.9	1018.9	1.314	1.314	1.314	1892.2	2.8225	3.0039	0.1814	5286.03	5310.03	24.00	95.9	200.7	260
28-Mar-15	Cloudy	21.4	1018.4	1.314	1.314	1.314	1892.2	2.7464	2.8410	0.0946	5310.03	5334.03	24.00	50.0	200.7	260
													Average	56.0		
													Min	28.8		
													Max	95.9		



Appendix G
Impact Air Quality Monitoring Results

1-hour TSP Monitoring Results at Station AM2
(Fanling Government Secondary School)

Date	Start Time (hh:mm)	1st Hour Conc. ($\mu g/m^3$)	2nd Hour Conc. ($\mu g/m^3$)	3rd Hour Conc. ($\mu g/m^3$)
5-Mar-15	11:05	78.6	79.1	77.3
11-Mar-15	10:40	78.9	79.6	81.0
17-Mar-15	13:45	81.9	80.8	79.7
23-Mar-15	10:00	68.2	71.9	72.4
28-Mar-15	13:10	79.1	78.1	79.5
			Average	77.7
			Min	68.2
			Max	81.9



CONTRACT NO. HY/2012/06

WIDENING OF FANLING HIGHWAY

- TAI HANG TO WO HOP SHEK INTERCHANGE

Graphical Presentation of Impact 1-hour TSP Monitoring Results

Project No.: 60307376 **Date: Apr-15** **Appendix G**

APPENDIX H
METEOROLOGICAL DATA FOR THE REPORTING MONTH

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Daily Extract of Meteorological Observations , March 2015 - Tai Po

Year 2015 Month 3 Go

Day	Mean Pressure (hPa)	Air Temperature			Mean Dew Point (deg. C)	Mean Relative Humidity (%)	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
		Absolute Daily Max (deg. C)	Mean (deg. C)	Absolute Daily Min (deg. C)					
01	1019.9	20.9	18.6	16.0	12.0	67	***	***	***
02	1016.7	17.7	16.9	16.2	13.8	83	***	***	***
03	1012.8	20.2	18.4	16.2	16.5	89	***	***	***
04	1015.8	19.3	16.2	14.8	14.8	92	***	***	***
05	1017.0	16.9	16.2	15.7	15.1	94	***	***	***
06	1017.4	17.2	16.7	15.9	15.8	95	***	***	***
07	1018.3	17.8	16.7	15.4	15.5	93	***	***	***
08	1018.2	19.3	18.1	16.9	15.8	87	***	***	***
09	1018.7	24.9	20.3	16.3	17.4	84	***	***	***
10	1022.6	20.5	17.4	15.5	12.2	72	***	***	***
11	1022.3	16.9	15.8	14.6	12.4	81	***	***	***
12	1021.2	15.9	14.6	13.4	13.4	92	***	***	***
13	1019.5	18.1	17.2	15.8	12.7	75	***	***	***
14	1018.8	20.0	19.0	17.8	16.5	86	***	***	***
15	1016.7	21.4	20.3	19.3	19.3	94	***	***	***
16	1015.9	22.5	20.9	19.8	20.1	95	***	***	***
17	1013.2	24.0	21.3	20.6	20.3	94	***	***	***
18	1011.8	23.7	22.0	20.9	21.0	94	***	***	***
19	1013.2	26.2	23.3	21.3	21.5	89	***	***	***
20	1015.4	26.5	22.7	20.6	20.8	90	***	***	***
21	1016.9	24.4	21.5	19.4	19.9	90	***	***	***
22	1018.1	21.7	20.6	19.0	17.3	82	***	***	***
23	1019.2	24.0	20.7	18.9	13.2	63	***	***	***
24	1022.8	22.0	19.2	18.0	14.6	75	***	***	***
25	1024.5	18.9	17.9	16.9	13.6	76	***	***	***
26	1024.5	20.1	18.3	17.1	14.8	80	***	***	***
27	1021.8	21.9	19.3	17.5	17.6	90	***	***	***
28	1018.6	22.9	20.3	18.0	16.9	81	***	***	***
29	1016.3	24.2	21.4	19.0	18.4	83	***	***	***
30	1014.9	25.0	22.5	21.2	20.2	87	***	***	***
31	1013.9	25.4	23.0	21.5	21.2	90	***	***	***

*** unavailable

Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected

Back

Daily Extract of Meteorological Observations , March 2015 - Tai Mei Tuk

Year 2015 Month 3 Go

Day	Mean Pressure (hPa)	Air Temperature			Mean Dew Point (deg. C)	Mean Relative Humidity (%)	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
		Absolute Daily Max (deg. C)	Mean (deg. C)	Absolute Daily Min (deg. C)					
01	***	22.3	18.9	16.0	***	***	0.0	040	9.6
02	***	17.5	16.8	16.2	***	***	0.0	090	16.4
03	***	21.9	18.7	15.9	***	***	2.0	060	8.5
04	***	19.0	16.3	15.7	***	***	1.5	110	12.8
05	***	16.5	15.8	15.2	***	***	3.0	090	18.6
06	***	17.0	16.6	16.0	***	***	0.5	100	7.9
07	***	17.8	16.7	15.3	***	***	1.0	070	12.3
08	***	20.2	18.2	16.6	***	***	0.0	060	9.2
09	***	26.6	20.7	16.8	***	***	0.0	090	6.8
10	***	22.7	17.6	15.2	***	***	0.0	100	21.2
11	***	18.0	15.8	14.1	***	***	0.0	100	14.0
12	***	16.4	14.8	13.8	***	***	5.5	040	9.4
13	***	19.7	17.1	15.3	***	***	0.0	090	10.4
14	***	20.3	19.4	17.7	***	***	0.0	060	8.7
15	***	22.9	20.8	19.6	***	***	0.0	060	7.5
16	***	24.6	21.6	20.3	***	***	0.0	060	6.0
17	***	24.9	21.6	20.7	***	***	0.0	060	7.0
18	***	24.6	22.3	20.5	***	***	0.0	060	7.2
19	***	29.5	24.2	21.7	***	***	0.0	070	8.2
20	***	29.8	23.3	20.4	***	***	0.0	080	5.9
21	***	27.0	22.3	20.5	***	***	0.0	090	8.0
22	***	22.0	20.3	19.0	***	***	0.0	070	14.0
23	***	25.5	20.9	18.7	***	***	0.0	100	16.7
24	***	24.2	19.7	17.8	***	***	0.0	090	20.0
25	***	19.8	17.9	16.6	***	***	0.0	090	16.1
26	***	21.7	18.9	16.9	***	***	0.0	050	10.6
27	***	22.4	19.8	17.6	***	***	0.5	060	3.6
28	***	25.8	20.8	17.6	***	***	0.0	130	7.2
29	***	27.4	21.5	18.2	***	***	0.0	050	8.0
30	***	28.0	23.0	21.0	***	***	0.0	070	8.1
31	***	27.5	23.6	21.6	***	***	0.0	120	7.0

*** unavailable

Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected

APPENDIX I
IMPACT DAYTIME CONSTRUCTION NOISE MONITORING RESULTS AND THEIR GRAPHICAL PRESENTATION

Appendix I Impact Daytime Construction Noise Monitoring Results

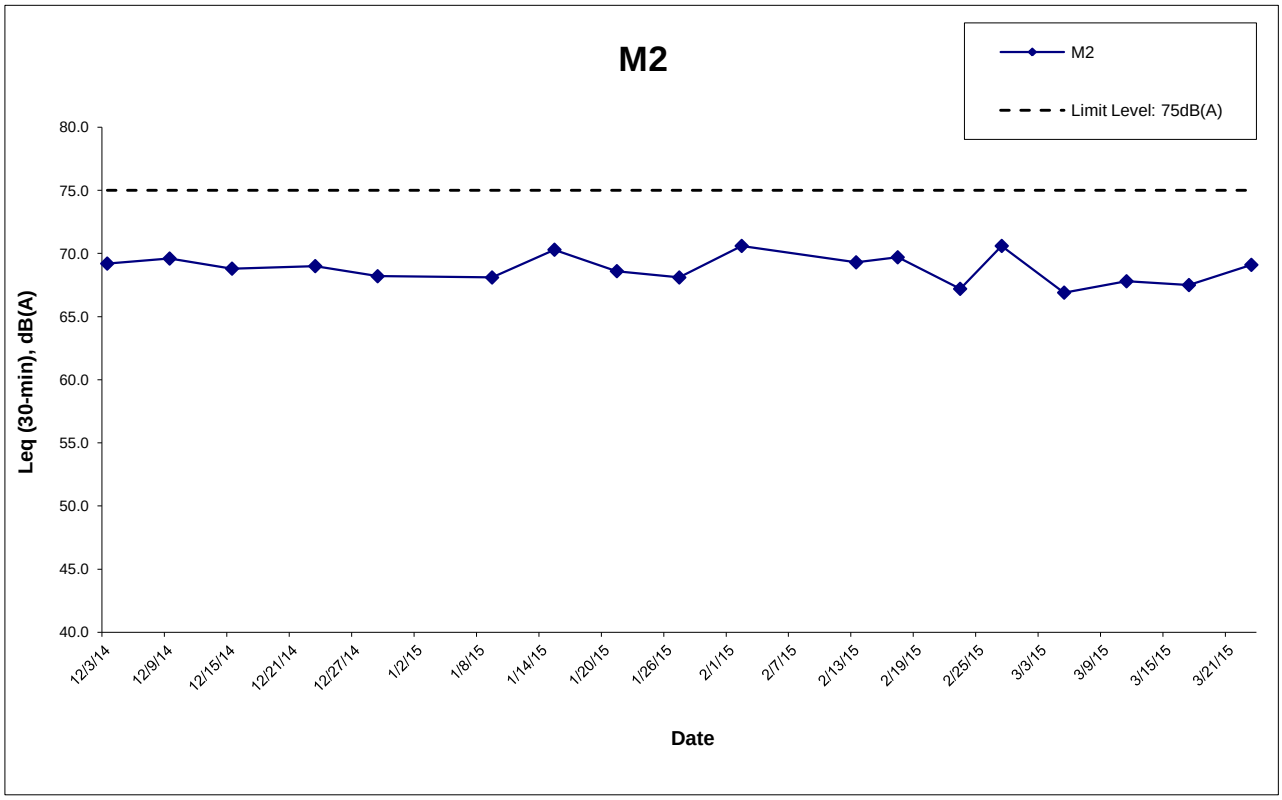
Location : M2 (West Tai Wo - Free Field)
Day time 07:00-19:00 hrs Normal Weekdays Impact Noise Monitoring Results

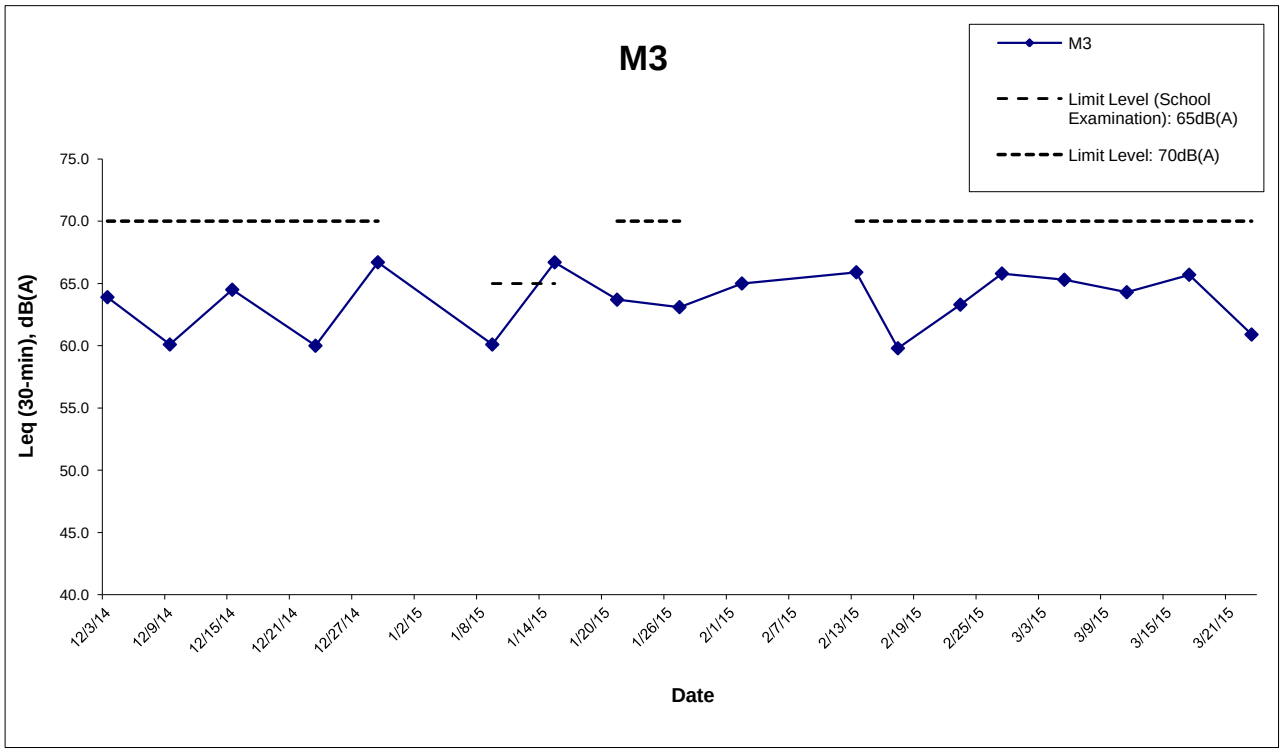
Date	Measured Noise Level for 30-min, dB(A)				Limit Level, dB(A)	Exceedance (Y/N)
	Start Time	Leq*	L10*	L90*		
5-Mar-15	13:14	66.9	68.5	64.2	75	N
11-Mar-15	9:50	67.8	69.6	63.5	75	N
17-Mar-15	11:29	67.5	69.2	65.3	75	N
23-Mar-15	10:45	69.1	72.0	68.0	75	N
	Min	66.9	68.5	63.5		
	Max	69.1	72.0	68.0		
	Average	67.9	70.0	65.6		

Location : M3 (Fanling Government Secondary School- Façade)
Day time 07:00-19:00 hrs Normal Weekdays Impact Noise Monitoring Results

Date	Measured Noise Level for 30-min, dB(A)				Limit Level, dB(A)^	Exceedance (Y/N)
	Start Time	Leq	L10	L90		
5-Mar-15	11:05	65.3	67.9	62.7	70	N
11-Mar-15	10:45	64.3	66.0	62.1	70	N
17-Mar-15	13:40	65.7	68.1	63.2	70	N
23-Mar-15	9:50	60.9	62.0	58.4	70	N
	Min	60.9	62.0	58.4		
	Max	65.7	68.1	63.2		
	Average	64.4	66.6	61.9		

* +3dB(A) Façade effect correction included
^ Limit Level of 70dB(A) applies to education institutes while 65dB(A) applies during school examination period.





Remark:

^ Limit Level of 70dB(A) applies to education institutes while 65dB(A) applies during school examination period.

APPENDIX J
EVENT ACTION PLAN

Appendix J – Event Action Plan

Event / Action Plan for Air Quality

Event	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Action Level				
Exceedance for one sample	1. Identify source; 2. Inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to dailv.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Exceedance for two or more consecutive samples	1. Identify source; 2. Inform IEC and ER; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency to daily; 5. Discuss with IEC and Contractor on remedial actions required; 6. If exceedance continues, arrange meeting with IEC and ER; 7. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Submit proposals for remedial actions to IEC within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.

Event / Action Plan for Air Quality

Event Action Level	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Limit Level				
Exceedance for one sample	1. Identify source; 2. Inform IEC, ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Exceedance for two or more consecutive samples	1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase frequency to daily; 5. Analyse Contractor's working procedures to determine possible mitigation to be; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by ER until the exceedance is abated.

Event / Action Plan for Noise Impact

Event Limit Level	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Action Level	1. Notify IEC and the Contractor. 2. Carry out investigation. 3. Report the results of investigation to IEC and the Contractor. 4. Discuss with the Contractor and formulate remedial measures. 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review with analysed results submitted by ET. 2. Review the proposed remedial measures by the Contractor and advise ER accordingly. 3. Supervise the implement of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to IEC. 2. Implement noise mitigation proposals.
Limit Level	1. Notify, IEC, ER, EPD and the Contractor. 2. Identify the source. 3. Repeat measurement to confirm findings. 4. Increase monitoring frequency. 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented. 6. Inform IEC, ER, and EPD the causes & actions taken for the exceedances. 7. Assess effectiveness of the Contractor's remedial actions and keep IEC, EPD and ER informed of the results. 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET Leader and the Contractor on the potential remedial actions. 2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise ER accordingly. 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial actions to IEC within 3 working days of notification. 3. Implement the agreed proposals. 4. Resubmit proposals if problem still not under control. 5. Stop the relevant activity of works as determined by the ER until the exceedance is abated.

APPENDIX K
SITE INSPECTION SUMMARIES

Site Inspection Summary

Inspection Information

Contract No.	HY/2012/06
Date:	3 March 2015
Time:	14:00
Inspection No.:	68

Non-compliance

Nil

Observations

Follow-up Observation(s)

1. The compactor has been removed off site for repairing and all contaminated soil has been cleared. (Closed)

New Observation(s)

2. The Contractor should review their mechanism to collect muddy water to prevent muddy water from discharging to public areas by clearing the mud accumulating in the U-channel or carrying out equivalent measures.

Remarks

Nil

Inspection Information

Contract No.	HY/2012/06
Date:	10 March 2015
Time:	14:00
Inspection No.:	69

Non-compliance

Nil

Observations

Follow-up Observation(s)

1. The U-channel has been cleared, slurry on the concrete surface has been removed and a water pump at the end of the U-channel has been deployed to prevent leakage of muddy water. (Closed)

New Observation(s)

Nil.

Remarks

Nil

Inspection Information

Contract No.	HY/2012/06
Date:	19 March 2015
Time:	14:00
Inspection No.:	70

Non-compliance

Nil

Observations

Follow-up Observation(s)

Nil.

New Observation(s)

1. An oil drum was placed on bare ground without drip tray. The Contractor should provide a drip tray to the oil drum to retain oil leakage, if any.

2. A chemical container was observed without chemical label. The Contractor should stick appropriate labels on the chemical container.

Reminder(s)

1. The Contracotr was reminded to use another means such as pH papers to monitor the pH of the water in the sedimentation tank regularly.

2. The Contractor was reminded to post the latest version of Environmental Permit at all site entrances.

3. The Contractor was reminded to ensure all water discharged from the construction site has passed the sedimentation tank.

Remarks

Nil

Inspection Information

Contract No.	HY/2012/06
Date:	24 March 2015
Time:	14:00
Inspection No.:	71

Non-compliance

Nil

Observations

Follow-up Observation(s)

1. A drip tray has been provided to chemicals. (Closed)

2. Corresponding chemical label has been affixed to the chemical container. (Closed)

New Observation(s)

3. Stagnant water and general refuse was observed in a trench. The Contractor should clear the stagnant water to prevent mosquito breeding and clear the refuse to maintain site hygiene.

Remarks

Nil

Inspection Information

Contract No.	HY/2012/06
Date:	31 March 2015
Time:	14:00
Inspection No.:	72

Non-compliance

Nil

Observations

Follow-up Observation(s)

1. Stagnant water and general refuse was cleared. (Closed)

New Observation(s)

Nil.

Remarks

Nil

APPENDIX L
STATISTICS ON COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

Appendix L

Statistics on Complaints, Notifications of Summons and Successful Prosecutions

	Date Received	Subject	Status	Total no. followed up by the ET this month	Total no. followed up by the ET since project commencement
Environmental complaints	19 December 2013	EPD referred a complaint from Lot no. 116 of Fui Sha Wai at Tai Hang of Tai Po which is concerned about the construction noise and diesel-like smell generated from construction activities nearby which caused nuisance and health problems on 19 December 2013 morning.	Closed	1	5
	24 February 2014	EPD referred an air-and-odour complaint on 24 February 2014. The complainant complained about the construction site located near the bus stop in Fui Sha Wai, Tai Hang, Tai Wo Service Road West. When construction works were carried out, odour, white smoke and dust were generated. The complainant asked for follow-up actions.	Closed		

	Date Received	Subject	Status	Total no. followed up by the ET this month	Total no. followed up by the ET since project commencement
	23 October 2014	EPD referred an air complaint on 24 October 2014. A resident complained against the excavation works of Tai Wo Service Road West between Nam Wah Po & Tai Hang Tsuen, which have piled up high stockpiles, causing serious dust nuisance to his house. The resident also complained that the stockpiles have not been covered and watered properly. He now requires the EPD to follow up. The location of complaint is near Lamppost Location EB5717.	Closed		
	31 December 2014	EPD referred a water complaint on 31 December 2014. The complainant complained about the muddy river outside Tai Hang Village Office on 29 December 2014. It was suspected that the muddy water was discharged from the construction works of the Project. He required the EPD to follow up.	Closed		

	Date Received	Subject	Status	Total no. followed up by the ET this month	Total no. followed up by the ET since project commencement
	25 March 2015	EPD referred a water complaint on 25 March 2015. The complainant complained about the generation of the smell of gasoline from the Widening of Fanling Highway construction site on Tai Wo Service Road West, causing serious nuisance to nearby houses. The situation has continued for a few weeks and she asked the EPD to follow up as soon as possible.	Closed		
Notification of summons	-	-	-	0	0
Successful Prosecutions	-	-	-	0	0

APPENDIX M
COMPLAINT INVESTIGATION REPORT

CONTRACT NO. HY/2012/06

Widening of Fanling Highway

Between Tai Hang and Wo Hop Shek Interchange (Stage 2)

ENVIRONMENTAL COMPLAINT ACTION FORM

Environmental Enquiry No.: EC-05

(Related Previous Enquiry NO.: --)

COMPLAINT DETAILS

Date Received	25 March 2015
Parameter	* ~~Air / Noise~~ / Odour nuisance / ~~Water / Waste / Landscape~~
Enquirer's Details	
Name	Not disclosed
Contact Tel No.	Not disclosed
Address	Not disclosed

FOLLOW-UP ACTION

First Contact with the Complaint by	* ~~Telephone~~ / ~~Site Visit~~ / Referred from EPD (ref. N05/RN/00006973-15)
Date of the First Contact	25 March 2015

Details of Complaint:

The complainant complained about the generation of the smell of gasoline from the Widening of Fanling Highway construction site on Tai Wo Service Road West, causing serious nuisance to nearby houses.

The situation has continued for a few weeks and she asked the EPD to follow up as soon as possible.

Investigation and Findings :

According to the information of the Contractor (China State Construction Engineering (HK) Ltd.), mini pile work was carried out at the construction site on Tai Wo Service Road West on 25 March 2015. The source of odour probably came from the exhaust from a generator during operation placed in front of House no.151 of Tai Wo Service Road West. The site layout plan is shown in Figure 1.

The Contractor understands their works area is located very close to the residential buildings and anticipated nuisance will be caused. Hence, before the commencement of piling work, they have erected acoustic mat on top of the existing hoarding in order to reduce both noise and machinery

exhaust impacts to the residents nearby. Upon the receipt of complaint on 25 March 2015, the Contractor investigated the works and immediately extended the existing acoustic mat to cover the whole face of the hoarding adjoining House no.151 to minimize the odour from spreading to the house of the complainant (see Figure 2). In addition, the generator was relocated away from the hoarding on 26 March 2015 (see Figure 3). The Contractor met the complainant on 27 March 2015 morning (see Figure 4) and she said the problem of odour has been solved after the Contractor moved the generator away from the house. The odour-related complaint is considered project-related. The Contractor is advised to implement the mitigation measures as stated in "Recommended Mitigation Measures".

Exceedance Associated with Site Activity	* No Exceedance / ~~Action / Limit~~
Recommended Mitigation Measures: 1) Reschedule works to minimize odour nuisance to the neighbouring residences; 2) Inspect the PMEs regularly and maintain them well to ensure that they are operating efficiently and that exhaust emissions are not causing nuisance; and 3) Inform the nearby residents in advance (at least one day) of construction works to be carried out.	

* Delete where inappropriate

MONITORING

Ad hoc Monitoring undertaken	* ~~Yes~~ / No

* Delete where inappropriate

Prepared by: *Y W Fung*

Designation: *Environmental Team Leader*

Signature:

Date: 30-Mar-15

Figure 1 – Site Layout Plan

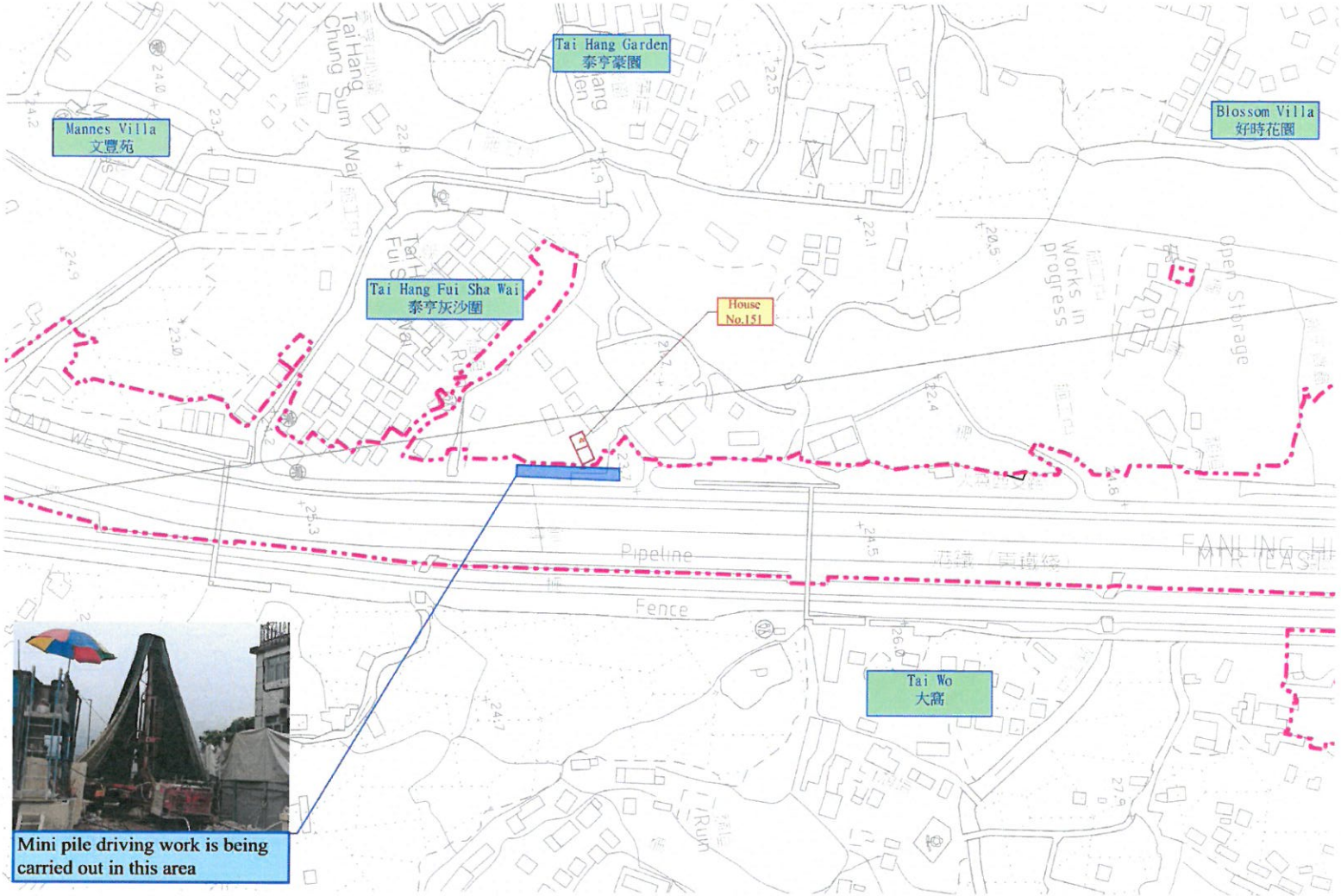


Figure 2 – Extended Acoustic Mat

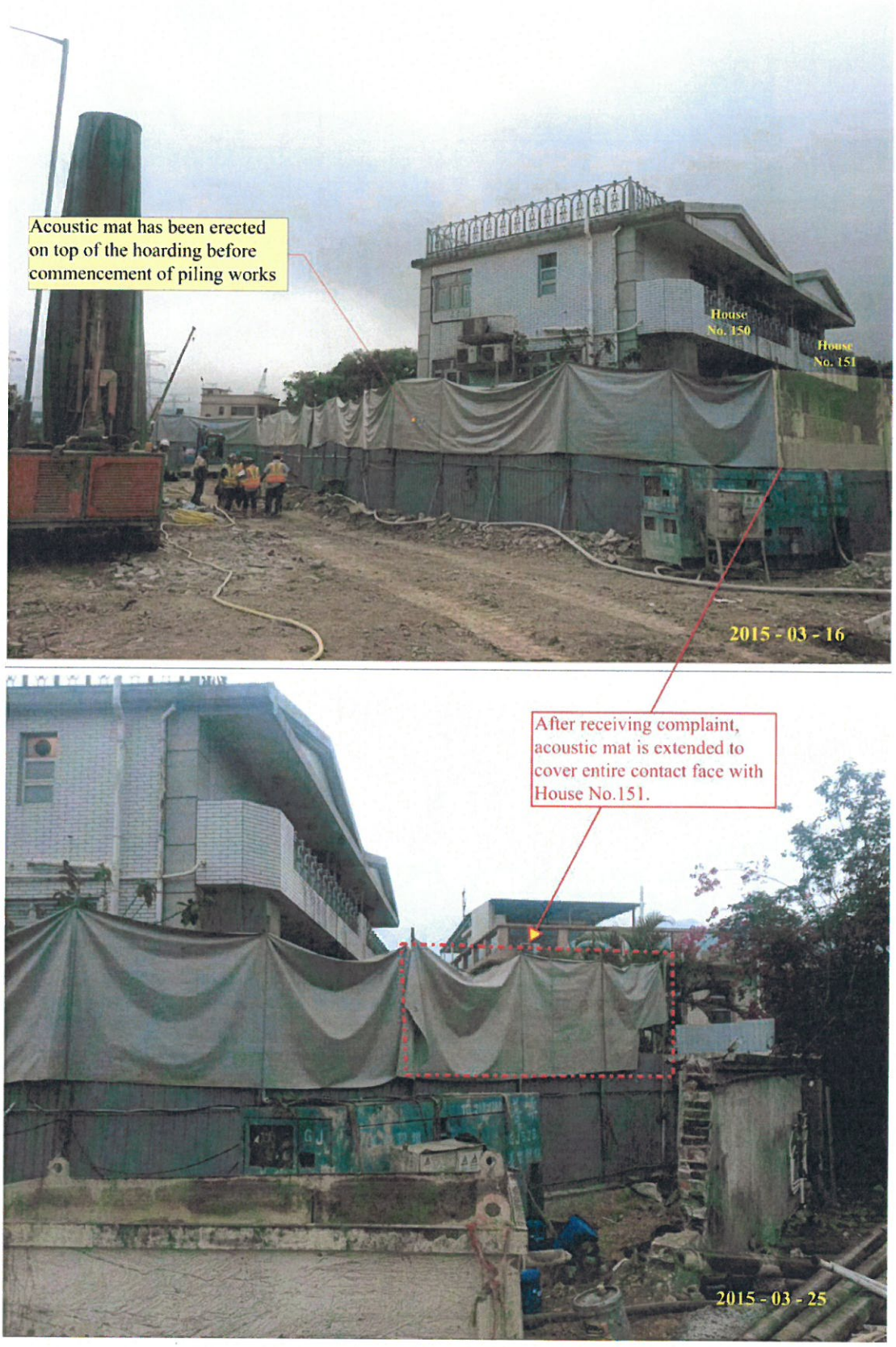


Figure 3 – Relocated Generator

Figure 4 – Contractor meeting the Complainant